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Experiences of children with or without disabilities in early childhood programs

by

Carolyn Luann Clawson

A dissertation submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Human Development and Family Studies
(Family Policy)

Program of Study Committee:
Gayle J. Luze, Major Professor
Carla Peterson
Susan Hegland
Dianne Draper
Mack C. Shelley

Iowa State University
Ames, Iowa
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Committee Member

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Committee Member

Signature was redacted for privacy.

Committee Member

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Major Professor

Signature was redacted for privacy.

For the Major Program

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ABSTRACT

The purpose of this dissertation was to explore multiple methods of assessing early childhood programs and to investigate children's individual experiences and activities in inclusive early child care and education settings. Specifically, this research investigated if individual play/learning experiences in early childhood programs differed for children with and without disabilities and the relationship between global quality of early childhood care and education programs and individual play/learning experiences of individual children with or without disabilities.

Early care and education quality is a complex phenomenon influenced by variables that exist on a number of levels including overall program quality, personnel quality, and interaction quality. Paper 1 describes a proposed ecological framework recognizes the multifaceted and interwoven components that can comprise quality and acknowledges the variation of experiences and learning opportunities in the early childhood environment. It also acknowledges the importance of multiple aspects of quality that comprise the early childhood environment. Quality evaluations that only examine quality from one perspective, most often the program level, may be neglecting important contributions of the program to children's development. Examining quality only from the program level makes the assumption that classroom quality impacts every child in the classroom similarly. This may or may not be true. Assessing quality from multiple perspectives, including children's individual experiences is important to truly assess and improve quality and provides valuable information for the individualization of care.

Paper 2 describes a research project that examined children's individual experiences and activities in early child care and education settings. Sixty 4- to 5-year-old children (30 with disabilities and 30 without disabilities) were observed in early care and education settings using the Early Childhood Environment Rating Scale-Revised (ECERS-R) and items from the ECERS-R adapted to focus on an individual child's experience. Early childhood global quality had the largest effect on children's individual experiences after controlling for family and child characteristics. Furthermore, it appeared that the relationship between global quality and children's individual experiences did not vary by child characteristics, including disability status. There was some evidence, however, that the relationship between global quality and individual experiences varied by children's behavior problems.

CHAPTER 1: GENERAL INTRODUCTION

Introduction

More children than ever before are enrolled in early care and education programs. In the most recent report from the U. S. Census Bureau (2002), 63% of children under the age of 5 were spending an average of 37 hours per week in some form of regular early care and education arrangement, with more placements in organized care and education facilities (e.g., child care centers, Head Start programs, preschools) than family child care and other non-relative arrangements (U.S Census Bureau, 2002). National statistics on care usage among families with children with disabilities is not known. However, using data from the Survey of Income and Program Participation, Brandon (2000) found labor force participation rate among mothers raising children with disabilities was only slightly lower than that of mothers raising children without disabilities (61% compared to 67%).

Researchers have demonstrated that high quality early care and education programs can be important contributors to children's development (Lamb, 1998; Love, Schochet, & Meckstroth, 1996; NICHD ECCRN, 2003; Scarr & Eisenberg, 1993; Vandell & Wolfe, 2000). Consequently, the emphasis on accountability of schools in the No Child Left Behind Act (2001), and policy driven studies reporting a high prevalence of poor quality early care and education in the United States (Cost, Quality, and Child Outcome Study Team, 1995) have spurred early childhood professionals to recognize it is important that early care and education programs not only be available and accessible, but be of high quality as well. Progressive state child care licensing regulation have even pinpointed aspects of quality such as accessible materials, appropriate discipline, and child-directed learning experiences that programs are required to implement and maintain (National Resource Center for Health and

Safety in Child Care, 2005a, 2005b). With this heightened interest come questions regarding specific aspects of an early childhood program that make a program good quality and good for *all* children, including children with disabilities or challenging behaviors.

Many early care and education quality evaluations and research projects have focused on quality indicators only from the program level. Although program quality is important, using only a program perspective can limit the usefulness of the information collected. A central aspect of early care and education is what a day in the program is like for a specific child with specific needs. An early care and education setting that provides good quality care along with individualized learning experiences can facilitate development for every child (Katims & Pierce, 1995; Lonigan, Anthony, Bloomfield, Dyer & Samwel, 1999). Program level information is less ideal for telling program evaluators what makes a program good from the perspective of individual children's experiences which are important aspects for program development and improvement. What makes a program good from the perspective of the individual children's experiences is an important perspective for making decisions regarding curriculum for young children, especially for children with disabilities and special needs. If a program is judged to be of high quality, then we should be able to conclude that it is good for all children's development. However, children may have different experiences within any classroom (Carta, Sainato, & Greenwood, 1988). Thus, a given classroom may produce high quality experience for most children but not for one or two children (Wolery, 2004). This is a concern especially in inclusive classroom where the quality may be high for children without disabilities but not for the child with disabilities or vice versa.

Given what is known about the importance of quality environments to support children's development, it is critical that early childhood professionals create such

environments and provide activities appropriate for *all* children, with and without disabilities. If we examine specific aspects of classroom processes and their links with children's behavior, we will be better able to determine the practical or pedagogical significance of the statistical associations between global or composite measures of classroom quality and children's developmental status. Information about the experiences of children with disabilities in care and educational settings is vital to understand how typical childhood free-play activities, a primary medium for learning in developmentally appropriate early childhood settings, can be part of a viable early childhood special education.

Objectives

The purpose of this dissertation was to investigate children's individual experiences and activities in inclusive early care and education settings. Specifically, this research project investigated: if individual play/learning activities and experiences in early childhood programs differed for children with and without disabilities and the relationship between global quality of early care and education programs and individual play/learning activities and experiences of individual children with or without disabilities.

This dissertation utilized an ecological framework to examine children's individual experiences within the context of early childhood programs. An ecological framework was chosen because it recognizes the multifaceted and interwoven components that can comprise quality and acknowledges the variation of experiences and learning opportunities in the early childhood environment. Early care and education quality is a complex phenomenon influenced by variables that exist on a number of levels including overall program quality, personnel quality, and interaction quality. Therefore, a framework that incorporates the multiple aspects of quality into one system was used to guide this research project. The

ecological framework used in this dissertation was adapted from Wolery's (2004) proposed ecology of the classroom, drawing on Bronfenbrenner's (1977, 1979, 1992), Horowitz's (Horowitz, 1987; Horowitz & Haritos, 1998) and Dunst's (Dunst et al., 2001; Dunst, Trivette, Humphries, Raab, & Roper, 2001) previous work because it acknowledges that multiple perspectives that are interwoven components comprise quality.

Method

This research was undertaken in 11 early childhood inclusive classrooms in central Iowa. Sixty 4- and 5-year-old children (30 with disabilities and 30 without disabilities) were observed in early care and education settings using the Early Childhood Environment Rating Scale-Revised (ECERS-R) and items from the ECERS-R adapted to focus on an individual child's experience. Parents were interviewed and teachers completed surveys about children's disability status, children's behavior, and demographic information.

Ethical issues related to participation by programs, and children and their families were considered. All information regarding the early childhood programs, children, and families was kept confidential. Each program, teacher, and child was assigned a code number so names would not appear on any document of the study. Trained observers gathered information by observing normal, everyday routines that occur in any early childhood program, such as snacks, play and group time with other children. Observers were trained to be unobtrusive during their observations. Extreme care was taken not to single out individual children during observations. Parents and teachers were made aware that they could withdraw from the study at any time if they desired without affecting their relationships with their early childhood program or Iowa State University.

Significance

Researchers have demonstrated that early care and education quality impacts the development of children as a group (Cost, Quality, and Child Outcomes Study Team, 1995; NICHD ECCRN, 2000; Vandell & Wolfe, 2000; Whitebook, Howes, & Phillips, 1990); however, relatively little is known about individual children's experiences in these settings. Most program quality measures are not designed to evaluate the effects of environments on individual children's experiences; rather the measures assess the classroom as a whole and the children's experiences on average. Although a rating of the global quality of an early care and education setting provides information regarding the opportunities available to participating children, that rating might not reflect accurately the actual experiences of each individual child. Likewise, process variables that examine children's experiences as a group neglect real differences in the quality of care and education each child is receiving in the early childhood setting.

There is also a paucity of research that examines nonparental care variables for children with disabilities. Existing research has focused on description of child care needs, type of arrangements and parent satisfaction with care (Brandon, 2000; Booth & Kelly, 1998; Landis, 1992; Warfield & Hauser-Cram, 1996); training of providers (Giovinazzo & Cook,. 1995, Griffin, Solit, & Bodner-Johnson, 1991; Jones & Meisels, 1987); and the acceptance of children with disabilities by child care providers (Crowley, 1990). Therefore, additional research examining experiences of children with disabilities within the context of program quality is warranted.

Dissertation Organization

The alternative thesis format has been selected for this dissertation. It includes two manuscripts to be submitted for publication. The following chapter, Chapter 2 "'I know it when I see it!' Evaluating early childhood programs", provides a review of the literature and discussion of evaluating early care and education programs prepared for submission to the *Early Childhood Education Journal.* The manuscript describes measures of early care and education quality and provides a framework that utilizes multiple perspectives and multiple methods to measure quality in comprehensive evaluations of early childhood programs. Chapter 3, "Experiences of children with or without disabilities in early childhood programs", is a manuscript prepared for submission to *Topic in Early Childhood Special Education.* It examines individual experiences and activities of children with and without disabilities in early child care and education settings.

Finally, Chapter 4 will summarize the study's findings and present implications. Implications for children, families and early care educators are discussed, as well as implications for future research and policy recommendations. The appendices include further information on the measures used in the research and summaries of the research project that were utilized to report study findings to participating early childhood programs and families.

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CHAPTER 2: "I KNOW IT WHEN I SEE IT" EVALUATING EARLY CHILDHOOD PROGRAMS

A paper to be submitted to the *Early Childhood Education Journal*

Carolyn Clawson

Abstract

The emphasis on accountability of early care and education programs and the increasing standards for such settings has prompted programs to look more closely at the quality of care and education they offer children. Program evaluations that examine quality from only one perspective, most often the program level, may be neglecting important contributions of the program to children's development. Examining quality only from the program level makes the assumption that classroom quality impacts every child in the classroom similarly. This may or may not be true. This article presents an ecological framework for evaluating early childhood programs using multiple approaches to measure quality. Diverse approaches to assessing quality and the importance of children's individual experiences within the context of other quality indicators will be discussed.

Introduction

More children than ever before are enrolled in early care and education programs. The most recent report from the U. S. Census Bureau (2002) states that 63% of children under the age of 5 were spending an average of 37 hours per week in some form of regular early care and education arrangement, with more placements in organized care and education facilities (e.g., child care centers, Head Start programs, preschools) than family child care and other non-relative arrangements (U.S Census Bureau, 2002). Research reviews and policy statements emphasize the cognitive and social development outcomes desired for

children cannot be achieved without quality services (Epstein, 2000). Consequently, it is accepted that high quality early care and education programs are important contributors to children's development (Lamb, 1998; Love, Schochet, & Meckstroth, 1996; NICHD ECCRN, 2003; Scarr & Eisenberg, 1993; Vandell & Wolfe, 2000). The emphasis on accountability of schools in the No Child Left Behind Act (2001) and policy driven studies reporting a high prevalence of poor quality early care and education in the United States (Cost, Quality, and Child Outcome Study Team, 1995) have spurred early childhood professionals to recognize the importance that early care and education programs not only be available and accessible, but be of high quality as well. Progressive state child care licensing regulations have even pinpointed aspects of quality such as accessible materials, appropriate discipline, and child-directed learning experiences that programs are required to implement and maintain (National Resource Center for Health and Safety in Child Care, 2005a, 2005b).

Together these initiatives have increased the emphasis on evaluation and accountability. Early care and education program administrators are seeking program evaluation methods that will evaluate the quality of care and education they offer children and their families more comprehensively. We know that it is not enough to say "I know a high quality program when I see one" (Epstein, 2000). But, we also need to ask what aspects of an early care and education program make it high quality for *all* children. Is it enough that programs meet basic health and safety recommendations or provide adequate materials and activities for children? Is it more important that there are positive relationships between families and teachers and that parents are satisfied with the program? Of course, to some degree, all of these aspects are important. But is there an evaluation tool that can address

these multifaceted dimensions of quality simultaneously? Not at this time. So, where do we go from here?

When selecting evaluation tools, common sense and best practices in program evaluation would prompt the evaluator to ask, "Why is the program being evaluated?" Whether the answer is to evaluate administration characteristics, policies, health and safety practices, or the learning environment, the answer will guide the selection of appropriate measures. The answer may be very general such as to identify areas for general program improvement. If reason for evaluation is too narrow in focus, however, aspects of the program central to families and children's development may be neglected.

Ultimately, the success of a program and the key question at the end of the day should be, "Is it good for these children?" By focusing on one or two aspects of quality the evaluator neglects the fact that multiple aspects of quality are working together to shape children's experiences in care and education. Many early care and education quality evaluations have focused on quality indicators only from the program level. Although it is important to examine care from this perspective, only examining quality from a program perspective can limit the usefulness of the program evaluations. If a program is judged to be of high quality, then we should be able to conclude that it is good for children's development. However, children may have difference experiences within any classroom (Carta, Sainato, & Greenwood, 1988). To implement Developmentally Appropriate Practices, quality experiences for each individual child are essential (Bredekamp & Copple, 1997). It is necessary for teachers "to know strengths, interests, and needs of individual children in the group to be able to adapt for and be responsive to inevitable variation" (Bredekamp & Copple, 1997, p. 9). Children's individual experiences in care and how these are intertwined

with other aspects of quality are often overlooked. This is especially important when the program cares for children with disabilities or challenging behaviors.

Early care and education quality is a complex phenomenon influenced by variables that exist on a number of levels including overall program quality, personnel quality, and interaction quality. A framework that incorporates the multiple aspects of quality into one system needs to be utilized in the program evaluation to provide a more in depth assessment of program quality. Doing so will provide information about the dynamic or interactive features of a program as well as its static features both of which are imperative. This article provides a framework that utilizes multiple approaches to evaluating early care and education programs. The importance of examining children's individual experiences in care within these approaches is also discussed.

Ecological Framework

A framework that incorporates multiple aspects of quality of early care and education is necessary to truly evaluate, and improve early childhood programs. To put aspects of quality in context, the contribution of general systems theory and ecological psychology are valuable. From "this perspective, individuals, families, organizations, and agencies are not viewed as independently functioning units but rather as components of an 'organized whole.' This whole is a hierarchical and orderly system of interrelated and interdependent components" (Bailey & Wolery. 1992, p. 64). "The whole will change over time as individuals, entities, and components within it interact and adapt to influences from within and external to the system" (Wolery, 2004, p. 205). An ecological perspective assumes any setting (e.g., early childhood classroom) operates in the context of broader systems (e.g., state and federal regulations, societal beliefs). These systems are nested within each other

and their connectedness implies that change in one level of the system influences the other levels. They include both proximal and distal influences on individuals (Bailey & Wolery, 1992; Bronfenbrenner, 1992; Thurman, 1997). An ecological framework is effective for evaluating early care and education quality because it recognizes the multifaceted and interwoven components that can comprise quality.

In Bronfenbrenner's theory of human ecology (1977, 1979, 1992), he proposed distinct levels of ecology represented as concentric circles with the child in the middle. Theory levels are the microsystem, mesosystem, exosystem, and macrosystem. The microsystem includes the immediate settings in which the child spends time (e.g., classroom). The mesosystem is comprised of the relationships between the microsystems and the people in them. This can include the interactions and relationships among the child's parents and teachers. The exosystem contains the societal structures that influence the mesosystem and microsystem but of which the child is not a direct participant. This can include formal services such as licensing regulations as well as informal organizations and agencies that influence the child's classroom (e.g., child care resource and referral agencies, community action agencies). Events and characteristics in the exosystem can put children at risk for developmental problems (e.g., lack of community resources) or can promote and enhance children's developmental progress (e.g., a local early childhood quality initiative). The macrosystem contains the beliefs and values of the culture or subculture as well as governmental policies. This forms the larger context in which the other three systems operate, such as a societal norm that places value on high quality early childhood care and education.

Horowitz expanded Bronfenbrenner's ecological theory by recognizing different levels of environmental inputs and influences on children's learning (Horowitz, 1987; Horowitz & Haritos, 1998). Horowitz's model is also represented by concentric circles with the child in the center and the inputs and influences most proximal to the child representing the innermost circles. The levels of Horowitz's model are: "(a) environment as stimulus array—the amount, intensity, pattern and variety of the stimulus, (b) environment as variation in learning opportunities, (c) environment as social system, and (d) environment as cultural context" (Horowitz & Haritos, 1998, p. 34). The first two levels (environment as stimulus array and learning opportunities) allow for the assessment of the nature and quality of early childhood care and education settings and variations in children's individual experiences in that care. The third and fourth levels are similar to Bronfenbrenner's exosystem and macrosystem.

In both of the ecological models described above, attention is given to the events and routines that occur within the child's environment. These events, routines, and other activities of daily life comprise the context in which children's experiences interact with their own characteristics to result in learning and development (Wolery, 2004). This framework prompted Dunst and colleagues (Dunst et al., 2001; Dunst, Trivette, Humphries, Raab, & Roper, 2001) to examine these factors in children's behavior and learning. They use the term "activity settings" to refer to these everyday events. Dunst and colleagues define activity settings as:

> a situation-specific experience, opportunity, or event that involves a child's interaction with people, the physical environment, or both and provides a context for

a child to learn about his or her own abilities and capabilities as well as the propensities of others (p. 71).

In Figure 2.1, a model is provided for evaluating early care and education quality. This model is adapted from Wolery's (2004) proposed ecology of the classroom, drawing on Bronfenbrenner's, Horowitz's, and Dunst's previous work. Evaluations have tended to focus on one aspect of quality, resulting in a very limited view of quality and restricting the improvement that could be made to increase the level of quality within the program. The proposed model provides a more comprehensive framework for evaluators to utilize. This model places the child's individual experiences at the center (Level 1). Level 1 represents the activity setting that includes everyday events and routines (e.g., interactions with teachers and peers, use of materials and physical environment, engagement in activities, play activities) specific to individual children. The activities and experiences can be viewed as a stimulus array, that is, a collection of actions or conditions (in this case experiences) that vary from one another in amount, intensity, pattern, and variety.

Level 2 includes process and global quality of the classroom comprised of the curriculum being used, the schedule and classroom practices, the space and furnishings, and accessibility to materials and activities. These are the learning materials and activities in the classroom available to all children. Level 3 is comprised of indicators of structural quality. This includes classroom structure such as child-teacher ratio and group size as well as teacher characteristics including education, training, and experience. It serves as a societal structure for the classroom. The final level of the classroom ecology (Level 4) is the administrative characteristics of the program of which the classroom is a member. The program philosophy, vision, and goals, the program the administrative structure (e.g., policies, compensation for

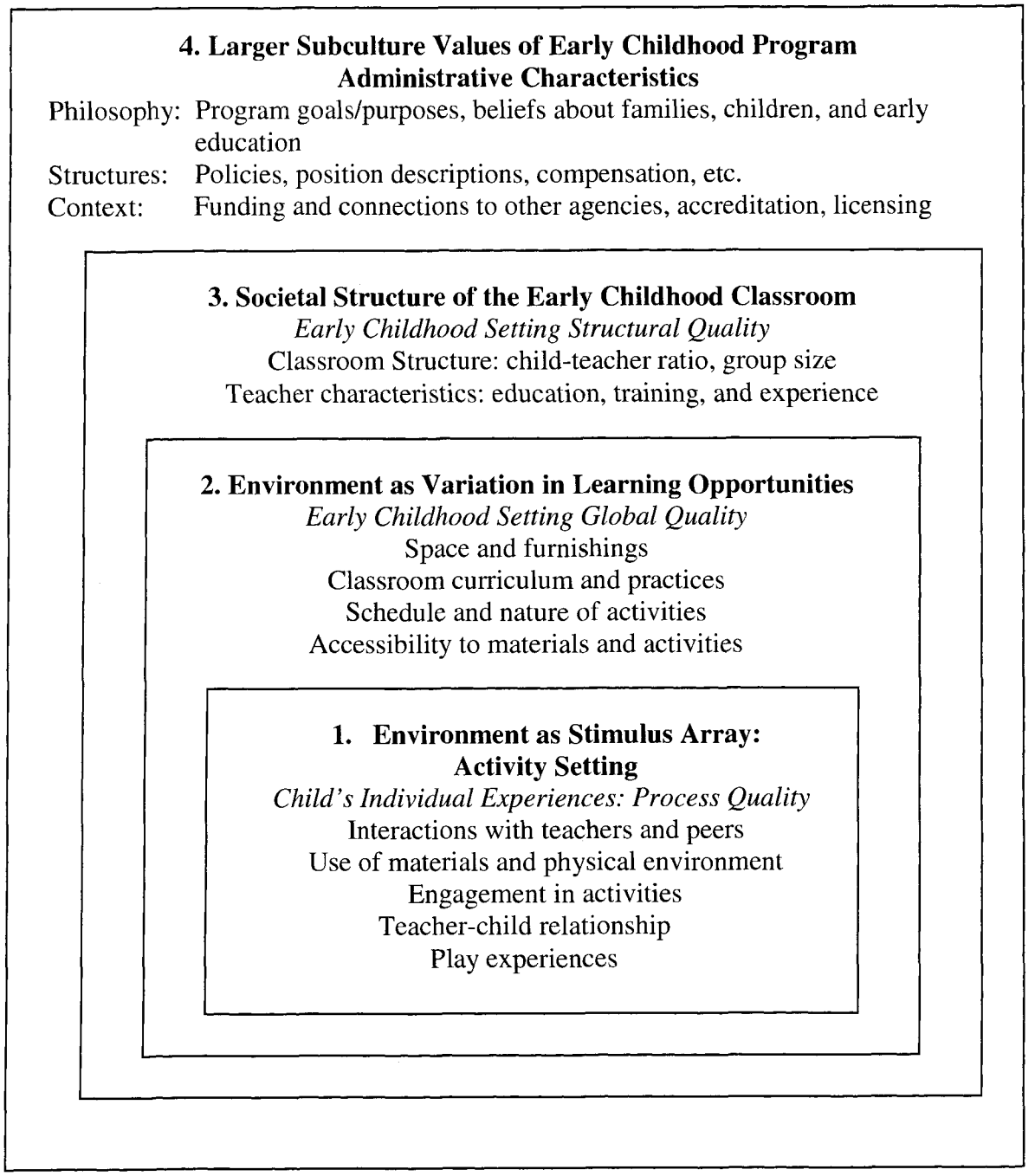

Figure 2.1. Ecology of the classroom. Factors that may influence child's experiences in early childhood care and education settings. Based on Wolery, M. (2004). Assessing children's environments. In M. McLean, M. Wolery, & D. Bailey, *Assessing infants and preschoolers with special needs*, 3rd edition, Pearson Merril Prentice Hall: Upper Saddle River, NJ.

teachers), the context of the program (e.g. funding, licensing, accreditations), and support for the staff (e.g., professional development, planning time) all influence how the other levels of the ecology function. These are the values of the larger subcultures of the early childhood program that can affect specific classrooms. Clearly, there are larger systems that can affect an early childhood classroom (e.g., community sentiment and initiatives, licensing regulations) but for purposes of evaluating early childhood programs, this proposed framework is useful to devise and carry quality improvement plans out.

In the presented theoretical framework early care and education is viewed as a system that can be characterized by structural, process, and global features (Aytch, Cryer, Bailey, & Selz 1999). The structural features act as antecedents to the program process and global features. In turn, process and global quality are antecedents to children's individual experiences which influence children's developmental outcomes. Process quality features also serve as the activity setting for individual experiences to occur. Often program evaluators tend to hone in on one or two aspects of quality while neglecting to acknowledge the interconnection of these indicators to the whole system. To truly evaluate a program, children's individual experiences must also be examined within the care and education environment. Proximal indicators of quality, those most immediate to the child, in this case, the children's experiences (represented in Level 1 of the proposed framework) need to be included in evaluations. Additionally, the relation among proximal and distal indicators, the variation in learning opportunities, the classroom societal structure, and the larger subculture of the program (Levels 2, 3, and 4 of the framework) need to be included to draw accurate conclusions for the improvement of care for all children including those children who may be at risk. The remainder of the article will describe different approaches to evaluating quality

and the importance of evaluating children's individual experiences within the context of the proposed ecological framework.

Measures of Early Care and Education Quality

When evaluating quality, the approach taken depends on the evaluation questions determined by stakeholders (Weiss, 1998). The values, beliefs, priorities, and needs of multiple stakeholders influence how early care and education quality is defined, and consequently, what aspects of the program will be evaluated (Moss, 1994). Therefore, a researcher or administrator conducting a program evaluation needs to communicate and listen to views and needs of the stakeholders involved in the evaluation (Weiss, 1998). Policy makers and government agencies may be more interested in evaluating health and safety standards to protect young children from immediate harm, and structural features such as child-teacher ratio that are within grasp of regulation (Cryer & Burchinal, 1997). An evaluation from early childhood professionals' and administrators' perspectives may focus on identifying process variables that promote positive child outcomes or parent satisfaction (Cryer & Burchinal). Additionally, both groups of stakeholders may be interested in a more global view of quality. All these aspects of quality are critical for children and can be categorized in three main approaches to assessing quality of early care and education: structural, global, and process quality.

Structural Quality

One approach to assessing quality focuses on structural indicators such as group size, teacher-child ratios, and teacher qualifications (i.e., education, training, and experience) that are thought to be more static and amenable to regulation (e.g., Phillips & Howes, 1987; Whitebook, Howes, & Phillips, 1990). These are relatively easy to quantify, and therefore,

are regulated by government bodies. Structural quality indicators are represented in Level 3 and Level 4 in Figure 2.1. They include the "societal" structure (norms and system to which persons and children adhere) within the classroom that relate to the framework in which the children's care experiences take place (Aytch et al., 1999) as well as the larger subculture values of the early childhood program such as philosophy, policy structures, context such as licensing, and supports for staff such as professional development activities and planning time.

Because structural quality indicators provide the "society" in which an individual classroom belongs, these indicators can set the stage for programs and teachers to offer children the safe, sensitive, and appropriate care that is essential for children's development (Howes & Stewart, 1987; Phillips, Mekow, Scarr, McCarney, & Abbott-Shim, 2000). These aspects promote other elements of quality such as teacher behavior, teacher-child interactions and developmentally appropriate practices that can be important contributors to children's development (Phillips & Howes, 1987; Vandell & Wolfe, 2000).

The relations among structural quality indicators and other quality indicators make them especially important to evaluate (Burchinal, 2001). Indicators such as group size and teacher-child ratio are easily observed and recorded (Phillips & Howes, 1987; Whitebook et al., 1990). Other indicators such as teacher qualifications can be asked via interview or self-administered questionnaire relatively easily. From an evaluation perspective, these features are the easiest and least expensive to monitor in the program. States regulate group size and teacher-child ratio and often teacher qualification in licensed programs; therefore, research surrounding structural quality has great policy implications for future legislation (National Association of Child Care Resource and Referral, 2005). Structural indicators have also been

found to be related to language skills, more frequent and positive interactions between teacher and child, and teacher behavior that is more stimulating, warm, and supportive (Burchinal, Cryer, Clifford, & Howes, 2002; Clarke-Stewart, Vandell, Burchinal, O'Brien, & McCartney, 2002; Howes, 1997; NICHD ECCRN, 1996, 2000a; Phillips et al., 2000).

Leadership and management practices in early childhood programs can also be key structural quality indicators (Bloom & Sheerer, 1992; Cost, Quality, and Child Outcomes Study Team, 1995; Whitebook & Sakai, 2004) and provide the larger subculture in which the classroom functions (see Figure 2.1, Level 4). Organizational practices that promote sound fiscal management, program planning and improvement, and family partnerships can support other aspects of quality including the aforementioned structural indicators, as well as global and process quality through increased staff job satisfaction and reducing staff turnover (McCormick Tribune Center for Early Childhood Leadership, 2005). There are few instruments designed to solely assess the administrative practices of an early childhood program (McCormick Tribune Center for Early Childhood Leadership). One such measure is the Program Administration Scale (PAS; Talan & Bloom, 2004), which utilizes an administrative semi-structured interview and document review to assess leadership and management functions (e.g., goal setting, setting up of systems to fulfill the mission of the early childhood program; McCormick Tribune Center for Early Childhood Leadership). Measure authors have reported that the PAS demonstrates good internal consistency, measures distinct but related early childhood program administrative practices, and differentiates between low- and high quality programs (T. Talon, personal communication, September, 27, 2005). Additional research is being completed to establish national norms and

to document how the PAS may be used to support program evaluations and improvement efforts (T. Talon, personal communication).

Global Quality

Global quality is a broad definition of quality that includes many aspects of care and education rather than specific characteristics. It represents a cluster of attributes that, collectively, tend to be positively related to children's development. The number and types of materials accessible to children, care routines, health and safety practices, space and furnishings, room arrangement, equipment, schedule, interactions and activities, as well as attention to parental and staff needs are features that are often included in global quality measures (Aytch et al. 1999). From a measurement standpoint, observations of quality in classroom-like settings with young children most often involve ratings of the environment on a variety of defined attributes that are purported to index quality.

In the ecological framework presented in Figure 2.1 (Level 2), global quality is part of the environment as variation in learning opportunities. Furnishings, nature of activities, as well as accessibility to materials can differ from day to day within a classroom, providing a variety of learning opportunities for children. Global quality measures provide a comprehensive evaluation of the materials and activities that are accessible to children and go beyond the structural aspects of the program. Classroom features such as room arrangement and interactions are often included in measures of global quality.

Global quality has been found to be related to children's learning and development (e.g., Burchinal et al., 2002). Programs high in global quality provide well-organized, child centered, play-oriented, developmentally appropriate experiences that encourage children to choose from a broad base of diverse activities (Wiltz & Klein, 2001). Similarly, children in

classrooms of higher global quality displayed more complex play with both peers and objects (Howes, Smith, & Galinsky, 1995; Love, Ryer, & Faddis, 1992) and fewer behavior problems (NICHD ECCRN, 2000b). Although global quality ratings can give an overview of care and education quality in an evaluation, determining where to go from there in terms of program improvement is not as clear as it could be. Global quality ratings can provide a direction for staff training. However, if only the global quality rating is used and individual content areas such as interaction or activities are not addressed, it limits the usefulness of identifying specific training concerns in a concrete way (Epstein, 2000). Instead, tools that observe process indicators in depth can add additional description to an evaluation.

The Early Childhood Environment Rating Scale-Revised (ECERS-R; Harms, Clifford, & Cryer, 1998) is one global quality assessment tool that has been widely used in the field. The ECERS-R includes 43 items rated on a 7-point scale that measure quality of the physical setting, teacher-child interactions, health, safety, scheduling of time, indoor and outdoor play spaces, play materials, center administration, and meeting staff needs. Sylva and colleagues (2003) have extended the ECERS to add more curricular educationally-oriented aspects of early childhood settings. The ECERS-Extension contains the subscales: Literacy, Mathematics, Science and Environment, and Diversity (ECERS-E; Sylva, Siraj-Blatchford, & Taggart, 2003). The scales were created in accordance with the United Kingdom's Foundation Stage Curriculum. Although originally devised as a research tool, the scales have been used by early childhood practitioners during self audits to determine quality of provision of curriculum (Sylva et al., 2003).

Another global quality measure is the Preschool Assessment of the Classroom Environment Scale-Revised (PACE-R; Raab, Dunst, Whaley, LeGrand, & Tayler, 1997),

designed to evaluate the classroom and program quality. The PACE-R has seven subscales, each containing five items rated on a 5-point scale. The subscales are (a) program foundation and philosophy, (b) management and training of staff, (c) environmental organization, (d) staffing patterns, (e) instructional context, (f) instructional techniques, and (g) program evaluation.

Although global quality measures such as the ECERS-R assess multiple aspects of the early childhood care settings, the measures tend to focus more on aspects of the physical environment and safety than on the in-depth process-focused aspects of the environment such as teacher-child relationships (Perlman, Zellman, & Le, 2004). Additionally, global quality measures are limited in assessing children's individual experiences. This perspective is critical as a basis for making decisions about programming for individual children, as well as for intervention planning and evaluation at both the child and program level. Examining children's individualized experiences within the context of program global quality can provide additional information about children's experiences and could inform individualized activity planning efforts.

Measures currently available to assess either structural or global quality only provide information regarding overall program quality and do not take into account if *all* children take the opportunity to utilize every aspect of their environment, use all materials, and experience similar quality interactions with teachers and peers. Using only these program quality measures can limit program improvement by neglecting that children have specific and individual needs that must be addressed to be a successful early care and education program.

Process Quality

Another approach in the examination of early care and education quality focuses on process quality variables (Howes, Phillips, & Whitebook, 1992). Process variables refer to children's direct experiences in care including teacher-child interactions, peer interactions, and teacher provision of developmentally appropriate or inappropriate activities (Howes et al., 1992). Unlike measures of global quality that measure some of these indicators in a general manner, process quality measures typically assess one indicator in depth (Perlman et al., 2004). These measures can focus on individual children or the group as a whole. For example, the Adult-Involvement Scale (Howes & Stewart, 1987) assesses caregiver responsiveness with individual children through observation while the Caregiver Interaction Scale (Arnett, 1989) measures quality of interaction the caregiver has with the group of children in the classroom. Other specific process quality measures include teacher-child relationship (Pianta, 1993), parent-teacher interaction (Elicker, Noppe, Noppe, & Fortner-Wood, 1997), teachers' practices or activities (NICHD ECCRN, 1996).

Process quality features are not as easy to measure as structural features because data collection methods for process measures are more time intensive and subjective. Consequently, process quality is more complicated to explain since it is embedded within the context of the early childhood classroom. Assessing process indicators also requires much more time and training in data collection procedures and can be difficult indicators to impact and change. Still, it is imperative to assess these more qualitative characteristics because the "most important variables in determining program quality are the nature of interactions and appropriateness of the curriculum" (Bredekamp, 1989, p. 12). Examining these more specific classroom processes provides a more practice-focused perspective, which can better help

practitioners shape developmentally enhancing early childhood programs (Bredekamp, 1989). Evaluating process quality indicators also helps identify specific training needs for program improvement. Early care and education literature has shown that proximal processes that influence cognitive outcomes involve interactions with adults characterized by ample talking, turn taking during play, contingent and focused attention on the child, and rich opportunities for exploration (Bradley et al., 1989; Hart & Risley, 1995; Katz & Snow, 2000; Tomasello & Farrar, 1986). Environments rich in spoken and written language experiences, where children are engaged in give-and-take conversations, afford abundant opportunities to explore environments, and provide constructive models of adult language, reading and learning are critical for children's development (Dickinson & Smith, 2001; McCartney, 1984; NICHD ECCRN, 2000b).

In the ecological framework presented in Figure 2.1 (Level 1), process quality is part of the environment as stimulus array and activity setting. Process quality indicators such as interactions between teachers and children and teacher sensitivity act as stimuli. These stimuli are an array or collection of actions or conditions that elicit or accelerate children's development. These indicators also act as the social and curricular environment (activity setting) in which children's individual experiences to take place. Process quality indicators such as teacher's overall warmth and the activities and opportunities they offer the children can influence individual children's interactions and experiences. Those process quality indicators that focus on children as a group influence the quality of individual experiences. Additionally, the societal structure and larger subculture of the early care and education program (structural quality indicators), as well as the environment as a variation of learning opportunities influence process quality. Process quality assessment tools go beyond the

global aspects and examine specific aspects of quality that may be included in an overall global quality rating which are necessary to highlight strengths and identify areas for improvement including staff training needs (Epstein, 2000). These measures are based on systematic observation and more beneficial in identifying specific staff training needs in a more concrete way than either structural or global quality indicators (Epstein).

Although process indicators that examine teachers' behavior in general are useful for training purposes, ignoring the fact that different children with unique abilities and needs are present in any early childhood classroom limits the individual planning which is critical for children with disabilities and challenging behaviors. Process quality is dynamic rather than static and assessment of acceptable or high quality at one time may not reflect subsequent observations. Still these measures provide early childhood personnel with a large number of ways to evaluate their efforts and make judgments about needed actions (Wolery, 2004). Process quality measures that address these individual children's experiences will be discussed more fully.

Relationships Among Structural, Global, and Process Quality

Not surprisingly, structural, process, and global quality indicators of the care environment are interwoven to create the overall care and learning environment (Phillips & Howes, 1987). This is illustrated in the ecological model in Figure 2.1. The multiple aspects of quality are viewed as components working together in an "organized whole" rather than independent units (Bailey & Wolery, 1992). With fewer children and more teachers in the classroom, teachers are able to spend more time individualizing learning and play activities for children. Promoting individualized care and learning is crucial since children in the same classroom may have varying levels of abilities and require different experiences and

assistance with learning activities. Additionally, settings in which teacher-child ratios are lower, teachers are more stimulating, responsive, warm, and supportive (NICHD ECCRN, 1996, 2000a); and other indicators of quality (global and process) are higher (NICHD ECCRN, 1996, 2000a; 2002; Phillips et al., 2000).

Although high quality early care and education settings are related to positive child development outcomes, likewise, low quality care can have adverse effects on children. Researchers have asserted that developmentally inappropriate classrooms foster less child involvement in activities (Howes et al., 1995; Love et al., 1992). Children in poor quality care are more likely to be delayed in language and reading skills, and display more aggression toward other children and adults (NICHD ECCRN, 2000b). Additionally, the growing body of research linking delays and differences in language during the preschool period to later problems in school (e.g., Scarborough, 1990; Vellutino, 1987) reiterates the importance of early experiences in care.

Although all these aspects of quality are important, often only program level variables are addressed due to lack of time and resources. It is necessary for program evaluators to ask what specific aspects of an early childhood program make a program good quality and good for all children and that includes examining quality using multiple approaches. Examining quality only at the program level for overall program evaluation may not help the program pinpoint why a particular child is struggling in care or why that child withdrew from the program. It does not provide information about why the program was successful for only some of the children and provides very limited information on individual children's interests and strengths. Both are valuable for program development and individualized planning. This is especially true for those children who present more challenging behaviors or have a

disability. Similarly, focusing only on child specific process indicators limits one's evaluation of a program as a whole.

Assessing Additional Areas of Quality

Research examining early childhood program quality makes it clear that quality care, as defined by structural, global, or process variables, is important for children and their development. Early childhood programs provide a context where many children can experience daily learning, play and interaction opportunities that can support cognitive, language, and social development (Cost, Quality, and Child Outcome Study Team, 1995; Vandell & Wolfe, 2000). This research has been critical because it has formed the basis of our ability to empirically support the need to evaluate the early care and education quality and the need to promote and provide support for quality programs. However, early care and education quality has been shown to account for less than 20% (range 1-19%) of the variance in predicting children's outcomes (NICHD ECCRN, 1998, 2003), indicating that other factors are contributing heavily to children's development. Quality of care often accounted for less than 5% of the variance in children's developmental outcomes in analyses that adjusted for family selection factors. Although family factors are strong contributors to children's outcomes (Clarke-Stewart et al., 2002; Howes, 1990; NICHD ECCRN, 2001), another key factor may be children's individual experiences in care. Active participation in the environment is necessary for children's learning and development (McWilliam, Trivette, & Dunst, 1985).

Examining the influence of early childhood programs on children's development only at the program level limits the conclusions about the quality of early care and education

programs. It limits the information individual programs can use for program development and improvement and is less than ideal for telling program evaluators what makes a program good from the perspective of individual children's experiences. In any classroom children may have different experiences (Carta et al., 1988). Thus, a given classroom may produce high quality experience for most children but not for one or two children (Wolery, 2004). This is a concern especially in inclusive classrooms where the quality may be high for children without disabilities but not for the child with disabilities. A central aspect of early care and education is what a day in the program is like for a specific child with specific needs. An early care and education setting that provides good quality care along with individualized learning experiences can facilitate development for every child (Katims & Pierce, 1995; Lonigan, Anthony, Bloomfield, Dyer, & Samwel, 1999).

Importance of Children's Individual Experiences

Previous researchers have demonstrated that early care and education quality impacts the development of groups of children (Cost, Quality, and Child Outcomes Study Team, 1995; NICHD ECCRN, 2000b; Vandell & Wolfe, 2000; Whitebook et al., 1990); however, relatively little is known about individual children's experiences in these settings. Most of the measures are not designed to evaluate the effects of environments on individual children's experiences; rather the measures assess the classroom as a whole and the children's experiences on average. Thus, understanding the effect of the environment on individual children requires careful monitoring of those children (Wolery, 2004). Examination of program quality has been crucial to support the need for quality early care and education settings. By examining the issue of early care and education quality from the program level; the assumption is made that classroom quality impacts every child in the classroom similarly.

However, it neglects to account for what makes a program good in terms of benefiting individual children. It is crucial to ensure that every child receives appropriate care and education and as a basis for making decisions about programming for individual children, as well as for intervention planning and evaluation at both the child and program level. It is important to examine each individual child's experience in early care and education settings, as well as whether and how those experiences may differ from global classroom quality.

Children's individual experiences are at the center of the early care and education environments' influence on children's development. The ecological theory described above supports the examination of children's individual experiences within the larger contexts of the activity setting, learning opportunities, classroom structure, and overall program subculture. In Figure 2.1, children's individual experiences are the stimulus for development and other process quality elements provide the activity setting for those experiences to occur. Good individual experiences, interactions, and play cannot occur if they are not present within the classroom. However, like global quality, the presence of these process quality indicators do not ensure each child has those experiences while in care.

Bredekamp and Rosegrant (1992) describe the "early childhood error" as the situation when early childhood educators prepare an appropriate, stimulating environment for young children but fail to follow it with guidance, "scaffolding" or providing supportive, responsive interactions with children as they engage in play activities. This suggests that even though early care and education settings' global quality are important contributors to child developmental outcomes, more specific process variables such as experiences of individual children also are effective predictors of child outcomes (Kontos, Burchinal, Howes, Wisseh, & Galinksy, 2002). Although a global quality rating of an early care and education setting

provides information regarding the opportunities available to participating children, that rating might not reflect accurately the actual experiences of each individual child. Likewise process variables that examine children's experiences as a group neglect real differences in the quality of care and education each child is receiving in the early childhood setting. This may be especially true for children who present special challenges to their teachers (e.g., children with developmental delays and/or children who engage in challenging behaviors).

To explore further this notion that high program quality does not necessarily mean equally high quality experiences for individual children, consider language and literacy development. Most program quality assessment tools in language and literacy measure the presence of books and literacy-related materials (McGill-Franzen, Allington, Yokoi, & Brooks, 1999) but high quality stimulation for language and literacy goes far beyond that. More important are the interactions that are occurring with teachers and children (Dickinson & Sprague, 2001). Teachers who encourage language use and include stimulation (for both language and literacy) in on-going activities throughout the day, with each child, are more likely to promote language development for all children in their care. Those teachers who know how to embed individual goals in the typical curriculum for children who are having difficulty (including children with disabilities), are more likely to create positive environments that can lead to increased learning (McGill-Franzen & Goatley, 2001). Delivering care and education experiences shaped by Developmentally Appropriate Practices guidelines depends on individualizing program activities to accommodate the different strengths, interests, and needs of each child (Bredekamp & Copple, 1997). The addition of evaluating children's individual experiences assist with program planning for individual children and help early childhood professionals better understand what specific aspects of

programs are most critical for individual and collective children's development. This perspective also provides a deeper level of understanding of early care and education quality, facilitating continuous program quality improvement.

Measures of Individual Experiences

There are a number of ways researchers have assessed children's individual experiences in early education and care settings; these have only recently been linked to the overall issue of care quality. Interviews with teachers and detailed observations of teacher behavior, teacher-child interactions, group and individual engagement, and children's play in the early childhood setting are among the methods used to assess children's individual experiences (e.g., Corsaro, 1985; Fernie, 1988; Klein, 1988; Wiltz & Klein, 2001).

Children's play. Howes and Smith (1995) examined child care quality, teacher behavior, children's play and cognitive activity among preschool aged children in child care settings. The complexity of cognitive activity was rated from oral contact and passive holding to active manipulation to exploiting of the unique property of the object for creative and unusual uses. They found that children's cognitive activity was enhanced within classrooms rich in creative play activities and staffed by teachers who engaged the children in positive social interaction. When teachers provided more positive social interaction, the children in their care tended to display greater emotional security, and when teachers provided more creative play activities the children in their care tended to display more advanced levels of cognitive activity (Howes & Smith). However, the quality of the classroom can also constrain the teacher-child relationship and activities. For example, a poorly equipped, crowded, and understaffed classroom will limit play activities available to

both teachers and children. However, an equipped, fully staffed classroom does not ensure that each child in care takes part in the appropriate play and learning experiences provided.

Although Howes and Smith's (1995) findings are limited by the fact that very few classrooms in their sample provided good or excellent child care, the results led researchers to posit that classroom quality may best be conceptualized as a context for the construction of teacher-child relationships and play activities. The construction of relationships and activities is therefore, dependent, in part, on the classroom stimulus and learning opportunities and in part on individual characteristics such as varying skill levels, behavior problems, or disability status brought into the context by the children (Howes & Smith).

Children's engagement. Another aspect of children's individual experiences that has been studied widely in early care and education is children's engagement levels. Engagement has been defined as the amount of time children spend interacting with the environment (with adults, peers, or materials), in a developmentally and contextually appropriate manner (McWilliam & Bailey, 1995). Numerous studies have demonstrated that engagement levels vary as aspects of the care environment change. Specifically, early research on engagement indicated that the accessibility of developmentally appropriate materials (Krantz & Risley, 1977; Montes & Risley, 1975) as well as incidental teaching (Hart & Risley, 1995; Warren & Kaiser, 1986) promotes children's engagement. Raspa, McWilliam, and Ridley (2001) found that lower levels of child engagement were more likely to occur in poor quality classrooms while higher levels child engagement were more likely to occur in high quality classrooms.

Children's interactions. Previous research has measured individual children's experiences in early care and education settings using measures such as the Ecobehavioral System for the Complex Assessment of Preschool Environments (ESCAPE; Carta,

Greenwood, & Atwater, 1985), Code for Active Student Participation and Engagement-Revised (CASPER II; Brown, Favazza, & Odom, 1995 as cited in Brown et al., 1999), and sampling techniques that assess children' interactions with objects, peers and teachers as well as the child's activities (Howes & Smith, 1995; Kontos & Keyes, 1999).

Researchers have revised and adapted some of the ECERS-R items to capture each child's unique experiences in early childhood programs. Initial data analyses found that items rating the individual experiences of children were highly correlated to items rating the overall global program quality using the ECERS-R (Clawson, Jeon, Peterson, Luze, Carta, & Atwater, 2003). However, there were differences between the quality of individual children's experiences and overall program quality in the areas of language/reasoning, interactions, and activities. Overall, researchers concluded that children's individual experiences differed from the classroom experiences, but were limited by the global classroom experience. Individual experience quality was dependent on the global ratings of the setting and did not exceed the global ratings for that setting. Not surprisingly, when global quality ratings are poor, individual children invariably have poor quality experiences. But disappointingly, participation in good quality classrooms did not ensure that individual children experienced activities and interactions likely to enhance their competence. Good global quality may be a supportive context for quality individual experiences; however, good classroom quality by itself does not ensure quality programming for each child. This supports Howes and Smith's (1995) research that suggested the presence of materials and structure of the classroom does not guarantee that each child in the program will take advantage of these environmental factors. The examination conducted by Clawson and colleagues, however, was restricted to low-income children who were in minimal to excellent care. Research examining quality

child care and children's experiences in care suggest that it is vital for children to have quality care but it may be just as important that children are actively utilizing elements of that high quality care.

Recommendations

It is important for early childhood administrators to regularly and systematically evaluate their programs. This allows for the assurance that the teachers are delivering quality care and education that promotes the development of each and every child in their care. The following are recommendations for using children's individual experience in a comprehensive program evaluation.

1. Children's individual experiences should be assessed within the context of global, structural, and other process quality indicators. For a comprehensive evaluation, evaluators must utilize multiple methods as well as address the proximal perspective of children's individual experiences in care. Assessment tools should examine the interactive features of the program such as the nature of children's interaction with peers and teachers within program quality (e.g., the physical elements of the classroom, societal structure of the classroom, and administrative characteristics of the program). Children's experiences are also shaped by the relationship their teachers and parents have; therefore, how the program serves individual families should also be addressed. Evaluating individual experiences provides a greater understanding of how overall program quality can truly benefit each child.

2. Children's individual experiences should be assessed continually. These experiences are dynamic and can vary from day to day and week to week. Ongoing monitoring can assist teachers in evaluating the learning centers and activities they provide as

well as the interests of individual children so the teacher can be sure that the child is experiencing all aspects of the center. This information is invaluable for teachers in individualizing learning experiences that are critical for development, especially for children who have a disability or display challenging behaviors.

3. Information about children's individual experiences should be used by administrators to evaluate teachers' performance and individualization of care and education. It will assist in revealing staffing issues such as identifying training or understaffing of a classroom. It will also provide administrators with useful information on the strengths and areas for improvement of each teacher in a very concrete way.

4. Teachers should use information about children's individual experiences to better plan individualized learning goals for children. Developmentally Appropriate Practices guidelines depend on individualizing program activities to accommodate the different strengths, interests, and needs of each child (Bredekamp & Copple, 1997). Therefore, with on-going monitoring of children's individual experiences teachers will be able to pinpoint areas of weakness in children's experiences as well as strengths, allowing for more purposeful programming for individual children. Those teachers who know how to embed individual goals in the typical curriculum for children who are having difficulty (including children with disabilities), will be more likely to create positive environments that can lead to increased learning (McGill-Franzen & Goatley, 2001).

Conclusions

The quality of child care, whether defined by structural, global or process quality indicators, can influence children's development, both in the short run (e.g., Burchinal,

Roberts, Nabors, & Bryant, 1996; Clarke-Stewart et al., 2002; Dunn, 1993; Peisner-Feinberg & Burchinal, 1997) and in the longer term (longitudinal effects related to school readiness and performance; e.g., Broberg, Wessels, Lamb, & Hwang, 1997; Campbell & Ramey, 1994; Curries & Thomas, 1995; Howes, 1988; NICHD ECCRN, 2000b; Peisner-Feinberg et al., 2001). Early care and education settings that provide children with developmentally appropriate daily learning activities, as well as play, and interaction opportunities have positive impacts on children's cognitive, language, and social development (Cost, Quality, and Child Outcome Study Team, 1995; Vandell & Wolfe, 2000).

The emphasis on accountability of programs, as well as the increase of standards for early care and education programs, has prompted programs to look more closely at the quality of care and education they offer children and their families. However, programs that only examine quality from one perspective may be neglecting essential contributions of the program, in particular children's individual experiences in care, to children's development. The purpose of this article was to present multiple approaches to measuring quality in early childhood programs and provide a framework for utilizing multiple methods for program evaluation purposes as well as address the importance of examining quality of care from the more proximal perspective of children's individual experiences in care.

Not surprisingly, structural, process, and global quality indicators of the care environment are interwoven to create the overall care and learning environment (Phillips & Howes, 1987). The theoretical framework presented the early childhood program as a system that can be characterized by structural, process, and global features (Aytch et al., 1999). Program evaluators who focus only on one aspect of quality are neglecting the importance of these indicators as a system with each child's individual experiences at the center of that

system. Additionally, assessing quality at only one level, in particular at the program level, researchers are limited in truly understanding the pathways of change through which early childhood settings influence child outcomes. Individual children's experiences within the care and education environment are key aspects which comprise the center of this framework. Although it is important to examine quality at the program level for overall program evaluation, it may not help the program pinpoint why a particular child is struggling in their care or why that child withdrew from the program. It also provides very limited information on individual children's interests and strengths which are crucial for program development and individualized planning.

An important aspect of early care and education is what a day in the program is like for a specific child with specific needs within the overall program. An early care and education setting that provides good quality care along with *individualized* learning experiences can facilitate development for *every* child (Katims & Pierce, 1995; Lonigan et al., 1999).

Given what is known about the importance of quality environments to support children's development, it is critical that early childhood professionals create such environments and provide activities appropriate for *all* children. It is imperative that researchers and early childhood professionals extend assessment of the quality of activities and interactions that occur while children are in care to better determine the practical or pedagogical significance of the statistical associations between global or composite measures of classroom quality and children's developmental status. This information would provide beneficial information for ongoing individualization of early care and education.

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CHAPTER 3: EXPERIENCES OF CHILDREN WITH OR WITHOUT DISABILIITES IN EARLY CHILDHOOD SETTINGS

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Carolyn Clawson

Abstract

This study examined children's individual experiences and activities in early care and education settings. Sixty 4- to 5-year-old children (30 with disabilities and 30 without disabilities) were observed in early care and education settings using the Early Childhood Environment Rating Scale-Revised (ECERS-R) and items from the ECERS-R adapted to focus on an individual child's experience. Early childhood global quality had the largest effect on children's individual experiences after controlling for family and child characteristics. Furthermore, it appeared that the relationship between global quality and children's individual experiences did not vary by child characteristics, including disability status. There was some evidence, however, that the relationship between global quality and individual experiences varied by children's problem behavior.

Introduction

The quality of early care and education settings is an important contributor to children's development (Lamb, 1998; Love, Schochet, & Meckstroth, 1996; NICHD ECCRN, 2003b; Vandell & Wolfe, 2000). The issue of quality care is especially important considering the ever-increasing numbers of children in nonparental care settings. In the most recent report from the U. S. Census Bureau (2002) 63% of children under the age of 5 were spending an average of about 37 hours per week in some form of regular early care and education arrangement, with more placements in organized care and education facilities (e.g.,

child care centers, Head Start programs, preschools) than family child care and other non-relative arrangements (U.S Census Bureau, 2002). National statistics on care usage among families with children with disabilities is not known. However, using data from the Survey of Income and Program Participation, Brandon (2000) found the labor force participation rate among mothers raising children with disabilities was only slightly lower than that of mothers raising children without disabilities (61% compared to 67%). Research reviews and policy statements emphasize the cognitive and social development outcomes desired for children cannot be achieved without quality services (Epstein, 2000). The emphasis on accountability of schools in the No Child Left Behind Act (2001), and policy driven studies reporting a high prevalence of poor quality early care and education in the United States (Cost, Quality, and Child Outcome Study Team, 1995) have spurred early childhood professionals to recognize the importance of early care and education programs not only being available and accessible, but of high quality as well. With this heightened interest come questions regarding specific aspects of an early childhood setting that make a program good quality and good for *all* children, including children with disabilities or developmental delays.

Few researchers have examined the relationship of global quality to quality of experiences for individual children, especially children with disabilities. In this study, with a sample of 4 to 5 year old children in early childhood center–based settings, we examined (a) the extent to which individual play/learning activities and experiences in early childhood settings differed for children with and without disabilities; (b) the relationship between the global quality of the early care and education setting and quality of care and education experienced by individual children both with and without disabilities; and (c) the extent to

which relationships between early childhood global quality and quality of care and activities experienced by individual children differed for children with and without disabilities.

Importance of Early Care and Education Quality

Early childhood programs provide a context where many children can experience daily learning, play and interaction opportunities that can support cognitive, language, and social development (Cost, Quality, and Child Outcome Study Team, 1995; Peisner-Feinberg & Burchinal, 1997; NICHD ECCRN, 2000, 2003a, 2003b; Peisner-Feinberg et al., 2001; Vandell & Wolfe, 2000). However, quality has been shown to account for less than 20 (range 1-19) percent of the variance in predicting children's outcomes (NICHD ECCRN, 1998, 2003b), indicating that other factors are contributing heavily to children's development. Although family factors are strong contributors to children's outcomes (Clarke-Stewart, Vandell, Howes, 1990; NICHD ECCRN, 1998, 2001), another key factor may be children's individual experiences in care.

Children's Individual Experiences and Activities in Care

Researchers have demonstrated that early care and education quality impacts the development of children as a group (Cost, Quality, and Child Outcomes Study Team, 1995; NICHD ECCRN, 2000; Vandell & Wolfe, 2000; Whitebook, Howes, & Phillips, 1990); however, relatively little is known about individual children's experiences in these settings. Most of the measures are not designed to evaluate the effects of environments on children's individual experiences; rather the measures assess the classroom as a whole and the children's experiences on average. Thus, understanding the effect of the environment on individual children requires careful monitoring of those children (Wolery, 2004).

The quality of early care and education settings is an important contributor to child developmental outcomes, however, more specific process variables such as experiences of individual children also are effective predictors of child outcomes (Kontos, Burchinal, Howes, Wisseh, & Galinsky, 2002). Although a global quality rating of an early care and education setting provides information regarding the opportunities available to participating children, that rating might not reflect accurately the actual experiences of each individual child. Likewise, process variables that examine children's experiences as a group neglect real differences in the quality of care and education each child is receiving in the early childhood setting. Only attending to group quality indicators can result in what Bredekamp and Rosegrant (1992) describe as the "early childhood error"—the situation when early childhood educators prepare an appropriate, stimulating environment for young children but then fail to follow it with "scaffolding" or providing supportive, responsive interactions with children as they engage in play activities.

By examining the issue of early care and education quality from the program level; the assumption is made that classroom quality impacts every child in the classroom similarly. However, it neglects to account for what makes a program good in terms of benefiting individual children, and *limits* the information individual programs can use for intervention planning and evaluation at both the child and program level. Although some children may have needs (e.g., disability or problem behavior) that potentially could limit their play and interactions, the goals of a high quality program should be to encourage all children to participate to the fullest degree (Bredekamp & Copple, 1997).

In any classroom, children may have different experiences (Carta, Sainato, & Greenwood, 1988). Thus, a given classroom may produce high quality experience for most

children but not for one or two children (Wolery, 2004). This is a concern especially in inclusive classrooms where the quality may be high for children without disabilities but not for the child with disabilities. An early care and education setting that provides good quality care along with individualized learning experiences can facilitate development for every child (Katims & Pierce, 1995; Lonigan, Anthony, Bloomfield, Dyer, & Samwel, 1999) regardless of disability status or problem behavior.

Children's individual experiences in early care and education settings have been assessed in a number of ways (e.g., children's play, children's engagement with materials and peers, children's interactions), but until recently these efforts have not been linked to the overall issue of care quality. Howes and Smith (1995) examined child care quality, teacher behavior, children's play, and cognitive activity among preschool aged children in child care settings. When teachers provided more positive social interaction, the children in their care tended to display greater emotional security. Likewise, when teachers provided more creative play activities, the children in their care tended to display more advanced levels of cognitive activity. However, Howes and Smith posited that classroom quality can constrain the teacher-child relationship and activities; for example, a poorly equipped, crowded and understaffed classroom will limit play activities available to both teachers and children. Furthermore, an equipped, fully staffed classroom does not ensure that each child in care takes part in the appropriate play and learning experiences provided.

Children's engagement has also been widely studied as an aspect of children's individual experiences in care. Engagement has been defined as the amount of time children spend interacting with the environment (with adults, peers, or materials), in a developmentally and contextually appropriate manner (McWilliam & Bailey, 1995).

Numerous studies have demonstrated that engagement levels vary as aspects of the care environment change. Specifically, early research on engagement indicated that the accessibility of developmentally appropriate materials (Krantz & Risley, 1977; Montes & Risley, 1975) as well as incidental teaching (Hart & Risley, 1995; Warren & Kaiser, 1986) promotes children's engagement. Raspa, McWilliam, and Ridley (2001) found that lower levels of child engagement were more likely to occur in poor quality classrooms while higher levels child engagement were more likely to occur in high quality classrooms.

Global quality measures have been adapted to examine children's individual experiences also. Researchers adapted some of the ECERS-R items to capture each child's unique experiences in early childhood settings. Initial data analyses found that items rating the individual experiences of children were highly correlated to items rating the global quality of the setting using the ECERS-R (Clawson, Jeon, Peterson, Luze, Carta, Atwater, 2004). However, there were differences between the quality of individual experiences of children and global quality of setting in the areas of language/reasoning, interactions, and activities. Overall, researchers concluded that children's individual experiences differed from the classroom experiences, but were limited by the global classroom experience. Individual experience quality did not exceed the global ratings for that setting. Not surprisingly, when global quality ratings are poor, individual children invariably have poor quality experiences. But disappointingly, participation in good quality classrooms did not ensure that individual children experienced activities and interactions likely to enhance their competence. Good global quality may be a supportive context for quality individual experiences; however, good classroom quality by itself does not ensure quality programming for each child. This supports Howes and Smith (1995) research that suggested the presence of classroom materials and

structure does not guarantee that each child in the program will take advantage of these environmental factors. Research examining quality child care and children's experiences in care suggest that it is vital for children to have high quality care but it may be just as important that children are actively utilizing elements of that high quality care. The examination conducted by Clawson and colleagues, however, was restricted to low-income children and did not address characteristics of the child such as disability status or problem behavior.

Potentially, information on children's individual experiences could assist with program planning for individual children and help early childhood professionals better understand what specific aspects of programs are most important for children's development, individually as well as collectively. Examining individual experiences within the context of program quality is important because it can provide a basis for making decisions about programming for individual children, as well as for intervention planning and evaluation at both the child and program level.

The Influence of Disability Status on Children's Experiences in Care

There is a paucity of research that examines nonparental care variables for children with disabilities. Existing research has focused on description of child care needs, type of arrangements and parent satisfaction with care (Booth & Kelly, 1998; Landis, 1992; Warfield & Hauser-Cram, 1996); training of providers (Giovinazzo & Cook,. 1995, Griffin, Solit, & Bodner-Johnson, 1991; Jones & Meisels, 1987); and the acceptance of children with disabilities by child care providers (Crowley, 1990). Bricker (1995) purported that including children with disabilities into inclusive settings would provide children with disabilities meaningful experiences and participation in all aspects of an early childhood program. There

has been mixed evidence, however, that children with disabilities are experiencing different or less complex activities or interactions while in care than their peers without disabilities.

Hestenes and Carroll (2000) found that children with and without disabilities tended to choose similar types of activities during free play. However, when level of play was considered, children with disabilities tended to engage less in complex levels of play (i.e., cooperative play) and in more solitary play and onlooking behavior than did their peers without disabilities (Hestenes & Carroll). Other researchers have found that children with and without disabilities displayed similar levels of play with objects (File 1994; File & Kontos, 1993).

Some researchers have reported that young children with and without disabilities in inclusive preschools displayed similar levels of engagement with materials (e.g., Kontos, Moore, & Giorgetti, 1998; McCormick, Noonan, & Heck, 1998) while others have not (McWilliam & Bailey, 1995). Specifically, McWilliam and Bailey (1995) found that children with disabilities spent less time engaged with peers and half as much time interacting with adults than children without disabilities. This was supported by Guralnick's work, which found that children with disabilities may be socially isolated or excluded in inclusive classrooms (Guralnick, 1999; Guralnick & Groom, 1988). Researchers have demonstrated that, in preschools, children with disabilities are involved in teacher initiated activities twice as often as children without disabilities (Odom, Skellenger, Ostrosky, 1993; Ostrosky, Skellenger, Odom, McConnell, & Peterson, 1994). Children with disabilities spent the majority of free play time in manipulative activities or nonplay, typically in a group of peers with a teacher while children without disabilities were most often in dramatic play and alone with teacher or a peer (Kontos, Moore, & Giorgetti, 1998). Furthermore, using ecobehavioral

assessment techniques, Brown, Odom, and Zercher (1999) found children without disabilities participated in more child-child social behaviors than children with disabilities, while children with disabilities received more adult support and attention than peers without disabilities. Taken together, the research comparing children with and without disabilities on experiences in care has been varied. Therefore, it is important to investigate how the relationships between program global quality and individual experiences may differ for children with and without disabilities.

Conceptual Model

Given what is known about the importance of quality environments to support children's development, it is critical that early childhood professionals create such environments and provide activities appropriate for all children, regardless of disability status. Early care and education settings are contexts where many children experience daily learning, play, and interaction opportunities that influence their cognitive and social development (Cost, Quality, and Child Outcome Study Team, 1995; Vandell & Wolfe, 2000). If we examine specific aspects of classroom process and their links with children's behavior, we will be better able to determine the practical or pedagogical significance of the statistical associations between global or composite measures of classroom quality and children's developmental status. Information about the experiences of children with disabilities in care and educational settings is vital to understand how typical childhood free-play activities, a primary medium for learning in developmentally appropriate early childhood settings, can be a viable part of early childhood special education. What makes a program good from the perspective of the individual children's experiences is an important

perspective for making decisions regarding curriculum for young children, especially for children with disabilities and special needs.

This study will examine children's individual experiences within the context of early childhood settings framed in ecological theory. An ecological framework was chosen because it recognizes the multifaceted and interwoven components that can comprise quality and acknowledges the variation of experiences and learning opportunities in the early childhood environment. Bronfenbrenner proposed distinct levels of human ecology represented as concentric circles with the child in the middle (1977, 1979, 1992). The microsystem includes the immediate settings in which the child spends time (e.g., home, classroom). The mesosystem is comprised of the relationships between the microsystems and the people in them. This can include the interactions and relationships between the child's parents and teachers. The exosystem contains the societal structures that influence the mesosystem and miscrosytem but of which the child is not a direct participant (e.g., availability of community resources, licensing regulations). Events and characteristics in the exosystem can put children at risk for developmental problems (e.g., lack of community resources) or can promote and enhance children's developmental progress (e.g., a local early childhood quality initiative). The macrosystem contains the beliefs and values of the culture or subculture as well as policies of governmental agencies. This forms the larger context in which the other three systems operate, such as a societal norm that places value on high quality early care and education. Although Bronfenbrenner's ecological theory provides a useful framework for examining multiple perspectives within one system, acknowledging the variation of experiences and learning opportunities in the environment will improve our understanding of the impact of early care and education on children's development.

Horowitz expanded Bronfenbrenner's ecological theory by recognizing different levels of environmental inputs and influences on children's learning (Horowitz, 1987; Horowitz & Haritos, 1998). Horowitz's model is also represented by concentric circles with the child in the center and the inputs and influences most proximal to the child represent the innermost circles. The levels of Horowitz's model are: "(a) environment as stimulus array—the amount, intensity, pattern and variety of the stimulus, (b) environment as variation in learning opportunities, (c) environment as social system, and (d) environment as cultural context" (Horowitz & Haritos, 1998, p. 34). The first two levels (environment as stimulus array and learning opportunities) allow for the assessment of the nature and quality of early care and education settings and children's individual experiences in that care. The third and fourth levels are similar to Bronfenbrenner's exosystem and macrosystem.

In both ecological models described, attention is given to the events and routines that occur within the child's environment. These events, routines, and other activities of daily life comprise the context in which children's experiences interact with their own characteristics to result in learning and development (Wolery, 2004). This framework prompted Dunst and colleagues (Dunst et al., 2001; Dunst, Trivette, Humphries, Raab, & Roper, 2001) to examine these factors in children's behavior and learning. They use the term "activity settings" to refer to these everyday events and define activity settings "as a situation-specific experience, opportunity, or event that involves a child's interaction with people, the physical environment, or both and provides a context for a child to learn about his or her own abilities and capabilities as well as the propensities of others" (Dunst et al., 2001, p. 71).

Figure 3.1 illustrates the model used for this study to assess classroom quality at a proximal level adapted from Wolery's (2004) proposed ecology of the classroom, drawing on

Bronfenbrenner's, Horowitz's, and Dunst's previous work. In this model the child's unique characteristics (i.e., gender, age, behavior, and disability status) are placed at the center (Level 1). Individual experiences comprise the next level (Level 2) and represents the activity setting which includes everyday events and routines (e.g., interactions with teachers and peers, use of materials and physical environment, engagement in activities) that are specific to individual children. The activities and experiences can be viewed as stimulus array, that is, a collection of action or conditions (in this case experiences) that vary from one another in the amount, intensity, and/or variety.

Level 3 encompasses the process and global quality of the classroom, which include the curriculum being used, the schedule and classroom practices, the space and furnishings, and accessibility to materials and activities. These are the materials and activities learning environment available to all children. Level 4 is comprised of indicators of structural quality. This includes classroom structure such as child-teacher ratio and group size as well as teacher characteristics such as education, training, and experience. It serves as a societal structure for the classroom. Level 5 includes the administrative characteristics (e.g. philosophy, structure, contexts and supports), of the program of which the classroom is a member. The program philosophy, vision, and goals of the program, the administrative structure (e.g., policies, compensation for teachers), the context of the program (e.g. funding, licensing, accreditations), and support for the staff (e.g., professional development, planning time) all influence how the other levels of the ecology function. These are the values of the larger subcultures of early childhood program that can affect specific classrooms. Clearly, there are larger systems that can affect an early childhood classroom (e.g., community sentiment and initiatives, licensing regulations), but for purposes of assessing more proximal factors

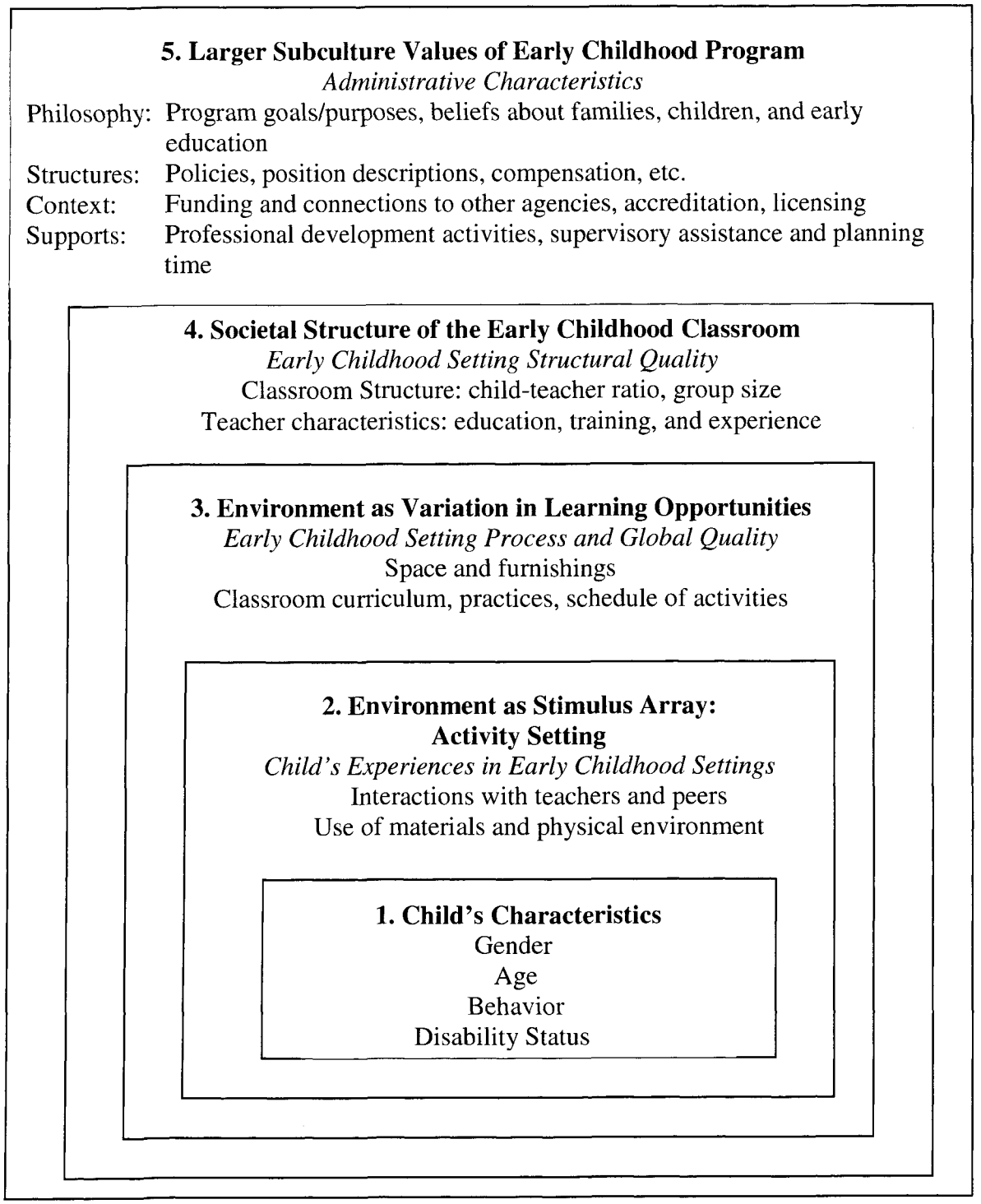

Figure 3.1. Ecology of the classroom. Factors that may influence child's experiences in early childhood care and education settings. Based on Wolery, M. (2004). Assessing children's environments. In M. McLean, M. Wolery, & D. Bailey, *Assessing infants and preschoolers with special needs*, 3rd edition, Pearson Merril Pretice Hall: Upper Saddle River, NJ.

affecting child's experiences, this proposed framework is useful. This investigation of children's individual experiences in early care and education will focus on the effects of learning opportunities (global quality—Level 3) on stimulus array and activity settings (children's individual experiences—Level 2) and variations that may occur due to children's unique characteristics, specifically gender, age, behavior, and disability status (Level 1).

Research Questions

This study addresses the following questions (a) How do the individual play/learning activities and experiences in early childhood settings differ for children with and without disabilities?, (b) What is the relationship between early care and education global quality and quality of care and education experienced by individual children with or without disabilities?, (c) Do the relationships between early childhood global quality and quality of care and activities experienced by individual children differ for children with and without disabilities?

Method

Participants

Special education consultants from the education agencies(intermediate education agencies, Head Start, school districts) that provide support services to children, their families and early education programs provided researchers a list of inclusive early childhood programs in central Iowa. From the list of programs, 11 programs agreed to participate in the study. Teachers within early childhood classrooms completed a checklist of indicators of disability for each child who agreed to participate. Using the checklist, children from each classroom were identified in 4 groups: a child (1) with an Individualized Education Plan (IEP), (2) receiving intervention services (i.e., speech and language, occupational or physical

therapy, behavior therapy/positive behavioral support, or mental health services), (3) with a suspected developmental delay, or (4) typically developing. A suspected delay included developmental delays or medical condition associated with developmental delays, such as difficulty in any of the following areas: vision, hearing, communication, cognitive problem solving, getting along with peers (aggressive, rejected or withdrawn), controlling his or her emotions, problems using arms, hands, legs or feet. These suspected delays were viewed as risks or indicators of potential disability. Groups 1-3 were combined to form the disability group for this study. For the remainder of this paper the term children with disabilities will be used to refer to children with disabilities and those children at risk for developmental delay. Children with suspected delays were included in the sample of children with disabilities because a greater proportion of these children, compared with typically developing children, are vulnerable to subsequent learning and problem behavior. This study was designed to examine children that would be entering general education kindergarten programs but would have a greater likelihood of receiving some special education during elementary school. Every child in each classroom was invited to participate. Out of a total of 188 possible participants, 98 parents (52%) agreed to allow their child to participate. Of those families, 60 children (30 with disabilities and 30 without disabilities or delays) were included in the final sample.

A matched comparison design was used to select 60 participants for the study. A target of 3 children with disabilities per classroom was chosen. In 9 of the 11 classrooms, 3 children with disabilities were randomly selected from those identified by the classroom teacher. The remaining 2 classrooms contained only 2 children with disabilities who were eligible and agreed to participate in the study. Therefore, in those cases both children were

included in the study. Children without disabilities matched with each child with disabilities on age and gender were selected in each classroom as a comparison. If there was more than one possible match per child, a child among the matching children was randomly selected. These children were randomly selected from the children without disabilities in the classroom were the same gender as and whose birthdays were within 6 months of the children with disabilities who had been previously selected.

Participating Classrooms and Teachers

Of the 11 early childhood inclusive classrooms participating, 4 were Head Start programs, 3 were at-risk programs (state funded programs that serve children who are at risk based on family composition, family social economic status, or developmental delays), and 4 were community preschools. Seven (64%) of the classrooms currently were providing care for children whose child care will be paid by federal/state child care subsidies. On average, about 3 children in the classroom had a disability while 5 had a suspected delay. Most (82%) of the settings were NAEYC accredited. All lead teachers had at least a 4 year college degree, and almost all had an early childhood teaching endorsement (91%). Table 3.1 presents additional descriptive information related to the early care and education settings and teachers.

Participating Children

A total of 60 4- to 5-year-old children who attended participating programs were included in this study (30 with disabilities and 30 without disabilities). Thirty-seven percent of the children attended community preschools, 33% attended Head Start programs, and 30% attended at-risk early childhood programs. Over half of the children were female (60%) and

Table 3.1

Characteristics of Early Care and Education Settings and Teachers (n=11)

Variable	N	%	M	SD	Range
Center variables					
Type of program					
Head Start	4	36.3			
At-risk early childhood	3	27.3			
Community preschool	4	36.3			
NAEYC accredited	9	81.8			
Classroom variables					
Group size			17.09	5.20	14-32
Teacher-child ratio			5.23	2.02	3-8
Number of children with disabilities in the classroom			3.55	1.20	2-6
Number of children with suspected delay in classroom			5.36	2.90	1-10
Number of full time staff per classroom			2.6	.81	2-4
Number of part time staff per classroom			1.1	.67	0-2
Teacher demographic variables					
Race/Ethnicity					
White	8	72.7			
Hispanic/Latino	1	9.1			
Black/African American	1	9.1			
Other	1	9.1			
Age			34.80	10.94	25-57
Annual salary					
$20,000 to less than $25,000	1	9.1			
$25,000 to less than $30,000	2	18.2			
$30,000 or more	7	63.6			
Not reported	1	9.1			
Lead teacher's level of education					
4-year degree	4	36.4			
Graduate degree	7	63.6			
Has paid health insurance from employer	9	81.8			
Hours per week working at current setting					
15 to less than 30 hours a week	2	18.2			
30 to 44 hours a week	6	54.5			
45 hours a week or more	3	27.3			

Table 3.1 (continued)

Variable	N	%	M	SD	Range
Teacher training variables					
Early childhood teaching endorsement	10	90.9			
Child Development Associate credential	1	91.9			
Attended early childhood conference or workshop in past year	10	90.9			
CPR and first aid training	10	90.9			
Hours of training completed in past year					
0 – 11	2	18.2			
12 – 23	2	18.2			
24 or more	7	63.6			
Teacher member of a professional organization	6	54.5			

ranged in age from 48 to 66 months (M = 56.2 months). A majority (82%) of the children were white. Children were from families with a range of income and parental education levels. Of the 30 children who had a disability or suspected delay, 9 had an Individualized Education Program (IEP), 14 had two or more identifiable risks or indicators of a potential disability, and 7 were receiving intervention services but did not have an IEP. Table 3.2 presents additional information to describe the children who participated. Children with disabilities did not differ from those children without disabilities on demographic characteristics.

Measures

Parent Survey

Parents reported parental educational level, parental occupation, family income, and child disability status via a telephone interview. Those parents who could not be reached via telephone were interviewed in person by researchers in the child care setting. All children

Table 3.2

Characteristics of Children and Families (N=60)

Variable	N	%	M	SD	Range
Family demographic variables					
Child's gender					
Female	36	60.0			
Male	24	40.0			
Child's age (months)			56.52	5.94	48-66
Child's ethnicity					
White	49	81.7			
Black	3	5.0			
Hispanic	5	8.3			
Asian	1	1.7			
Biracial/Multiracial	2	3.3			
Current family income (annually)					
Less than $12,499	8	13.3			
$12,500 to less than $19,999	13	21.7			
$20,000 to less than $29,999	9	15.0			
$30,000 to less than $39,999	7	11.7			
$40,000 to less than $49,999	6	10.0			
$50,000 to less than $59,999	4	6.7			
$60,000 or more	9	15.0			
Not reported	4	6.7			
Mother's education					
Less than high school	8	13.3			
High school diploma/GED	17	28.3			
Some training or education beyond high school	6	10.0			
2-year college degree	10	16.7			
4-year college degree	9	15.0			
Graduate school degree	8	13.3			
Not reported	2	3.3			
Father's education					
Less than high school	7	11.7			
High school diploma/GED	19	31.7			
Some training or education beyond high school	4	6.7			
2-year college degree	6	10.0			
4-year college degree	9	15.0			
Graduate school degree	7	11.7			
No father in child's life	6	10.0			
Not reported	2	3.3			

Table 3.2 (continued)

Variable	N	%	M	SD	Range
Family early care variables					
Type of program attended					
Head Start	20	33.3			
At-risk early childhood program	18	30.0			
Community preschool	22	36.7			
Hours per week in care			19.55	9.60	10-40
Months with current teacher			7.8	4.82	3-18
Types of services received					
Children with IEPs	9	15.0[b]			
Language	7	77.8[c]			
Behavior	2	22.2[c]			
Physical/Occupation	4	44.4[c]			
Early Childhood Special Education services	5	55.6[c]			
Children receiving intervention services but do not have an IEP	7	11.7[b]			
Language	7	100.0[d]			
Behavior	1	14.3[d]			
Physical/Occupation	3	42.9[d]			
Children with suspected delay[a]	14	23.3[b]			
Language problems	6	42.9[e]			
Vision/hearing problems	2	14.3[e]			
Cognitive problems	3	21.4[e]			
Behavior/emotional problems	11	78.6[e]			
Physical/Occupation	1	7.1[e]			

[a] Each child included in this category was identified with more than one risk condition.
[b] Percent of all children.
[c] Percent of children with IEPs.
[d] Percent of children receiving intervention services but do not have IEP.
[e] Percent of children with suspected delay.

who were identified as having developmental problems or special needs by their parents also were identified as having a disability or suspected developmental delay by their teacher. Only 3 children identified by their teachers as having a suspected developmental delay were not identified by their parents as having a developmental problems or special needs.

Classroom Observations

Early care and education quality. Quality of care was measured using the Early Childhood Environment Rating Scale-Revised Edition (ECERS-R; Harms, Clifford, Cryer, 1998). The ECERS-R provides a rating of overall, or global, quality and consists of 43 items organized into the following subscales: (a) Space and Furnishings, (b) Personal Care Routines, (c) Language and Reasoning, (d) Activities, (e) Interaction, (f) Program Structure, and (g) Parents and Staff. Each item is rated using a 7-point scale where a 1 indicates inadequate quality, a 3 indicates minimal quality, a 5 indicates good quality, and a 7 indicates excellent quality. A total average score across the seven subscales was calculated for each classroom to create a global quality score for each classroom. Subscale internal consistencies for the current sample were in an acceptable range, varying from .60 to .93. The total scale had an internal consistency of .98 (Cronbach's alpha). These are similar to internal consistencies reported by the authors for both subscales (ranging from .71 to .88) and total scale (α = .92). During ECERS-R observations, group size and child-teacher ratio were also recorded. One ECERS-R observation per classroom was completed and used as an indicator of global quality available for all children in the classroom.

Individualized adaptation of the ECERS-R. The use of ECERS-R items with just one child in a setting was explored in a previous study by Early Head Start Evaluation team partners (Clawson et al., 2004). For the study, items from the ECERS-R that could be adapted to focus on an individual child's experience were used to observe each participating child. The rationale guiding initial adaptation of ECERS-R items was that while global quality ratings provide information regarding the opportunities available to children, that rating might not reflect accurately an individual child's actual experiences. Ratings on

ECERS-R items often reflect the availability of materials or activities, thus providing a rating of the overall potential quality of the experience provided by the environment. In contrast, individualizing ECERS-R items can reflect the quality of activities and interactions that the individual child experiences in the classroom.

The individualization of ECERS-R items began with a review of all ECERS-R items. Items that could be adapted to focus on an individual child were retained for use. For example, an item designed to facilitate rating of a physical feature of the classroom (e.g., sufficient indoor space and furnishings for children) was dropped from further consideration because the assumption was made that classroom furniture and/or play spaces would be available to all children. In contrast, items that reflected child interactions with adults or peers (e.g., staff show respect for children) and items that reflected participation in curricular experiences (e.g., staff read books to children informally) were retained. Items then were adapted to focus on the actual experiences of the observed child. An additional item focused on early literacy experiences was developed to provide further information about that specific curricular experience. This resulted in 16 items: Language/reasoning, Encouraging children to communicate, Using language to develop reasoning skills, Informal use of language, Dramatic play, Nature/science, Math/number, Early literacy, Use of TV, video, and/or computers, Promoting acceptance of diversity, Discipline, Staff-child interaction, Interactions among children, Free play, Group time, Provisions for children with disabilities. Examples of items include "Language/reasoning: Child participates in at least one staff-initiated receptive language activity; Early literacy: Staff talk about sounds or engage child in some phonemic awareness activities." Items were rated in the same way used to score ECERS-R, using a seven-point scale with a 1 indicating inadequate quality, a 3 indicating minimal quality, a 5

indicating good quality, and a 7 indicating excellent quality. To rate each item, the observer was asked to focus on the observed child and rate that individual child's actual participation and/or experience.

Previous analyses of individualized ECERS-R items with a sample of low-income children found that individualized ECERS-R scores and ECERS-R scores were highly related, ranging from correlation values of .49 to .84; however, high ECER-R scores did not ensure high individualized ECERS-R scores. Previous research using the individualized ECERS-R items identified three conceptual groupings from Principal Components analyses: (1) Curriculum Experiences, (2) Interaction Experiences, and (3) Language Experiences (Clawson et al., 2004). For the present study items were summed to create the three subscales. Subscale internal consistencies for the current sample ranged from .50 to .76, with a total scale internal consistency of .80 (Cronbach's alpha). Previous subscale internal consistencies were reported to range from .71 to .88, with a total scale internal consistency of .92 (Cronbach's alpha).

Children's Problem Behavior

The Child Behavior Checklist Caregiver-Teacher Report Form (C-TRF) and the Child Behavior Checklist/1½-5 (CBCL/1½-5) Parent Form (Achenbach, 1991a, 1991b) were used to measure each child's problem behaviors. The C-TRF and CBCL/1½-5 include items such as "(Child) doesn't get along with other children," and "(Child) doesn't answer when people talk to him/her." The C-TRF and CBCL/1½-5 measure both internalizing problem behavior, which include depression, anxiety, and somatization; and externalizing problem behavior, which include aggressive and destructive behavior. Standard scores (t scores) for internalizing, externalizing, and total problem behavior were used as continuous measures of

child problem behavior. Results were also categorized into variables indicating whether children scored at or above the 82nd percentile, which signified problem behavior falling into clinical or borderline clinical range, were also considered. Subscale internal consistencies for the current sample ranged from .76 to .92, with a total scale internal consistency of .93 for parent report and .92 for teacher report (Cronbach's alpha). Author report one-week and three-month test-retest reliabilities for the scale range from .84 to .99 (Achenbach, 1991a, 1991b).

Data Collection Procedures

Data Collection

A trained observer visited each classroom three times for four hours for each visit, completing the ECERS-R and two individualized ECERS-R (one for each child in a pair) during the initial visit, and two individualized ECERS-R during two subsequent visits within the same week. Individualized ECERS-R observations were completed in matched pairs so there could be an accurate comparison of each matched pair involvement and activities in care. There was no difference in individualized ECERS-R scores due to day of observation (t = .08, p = .68). This resulted in an ECERS-R score for the classroom and individualized ECERS-R score for each participating child. After classroom observations were completed, teachers completed the teacher survey and C-TRF. Parents also completed the parent survey and the CBCL/1½-5 via a phone interview or in person at this time.

Reliability of Observation Tools

Before data collection began, three research assistants were trained by the first author on observation measures (ECERS-R and individualized ECERS-R). The first author had been trained on the measures as a research assistant on national child care evaluation projects.

Early inclusive education classrooms that did not participate in the study were observed for training purposes. Research assistants were required to obtain inter-rater agreement within one point on at least 85% of items of both measures, following procedures recommended by one of the test authors (T. Harms, personal communication, 2000). Inter-rater reliability was monitored during data collection to maintain reliability among observers (within every six observations). Percentage of agreement ranged from 75 to 95%, and averaged 90% agreement within one point across all observations. Interobserver reliability on the ECERS-R and individualized ECERS-R ranged from kappa = .82 to kappa = .96, median = .89.

Results

Analyses Plan

Descriptive statistical analyses were employed to examine the distribution of demographic, control, predictor, and outcome variables. Next, correlational analyses were used to examine the relationships among control, predictor, and outcome variables. Third, multivariate analyses of covariance and stagewise regression were employed to examine the relations among the predictor and outcome variables while controlling selected demographic variables. Maternal education, family income, child's age, child's gender, and child's problem behavior were used as control variables in each analysis. Maternal education and family income were controlled to account for differences in the quality of care and experiences that may be due to parent's selection of higher quality care. Child characteristics of age, gender, and problem behavior were included because they are believed to have a relationship to the child's experiences. Global quality was used to predict quality of individual experiences and to account for the fact that children's individual experiences were

nested within classrooms. The role of disability status of the child predicting the quality of individual experiences was also examined.

Preliminary Analyses

Early Care and Education Classroom Quality Descriptive Statistics

ECERS-R total and subscale scores were calculated for each classroom. Only subscales which included items that were individualized were calculated for analyses. Descriptive statistics for each ECERS-R subscale and total score are presented in Table 3.3. The mean of the ECERS-R for the entire sample was 5.10 (*SD* = .94). Six of the classrooms were rated good quality (ECERS-R score between 5.00 and 7.00), and 5 were rated mediocre quality (ECERS-R score between 3.00 and 4.99). None were rated poor quality (ECERS-R score between 1.00 and 2.99). Classroom group size averaged 17 children, but ranged from 14 to 32 children. Teacher-child ratio averaged 1 teacher per 5 children but ranged from 1 per 3 to 1 per 8 children. These ratios were in compliance with Iowa licensing

Table 3.3 regulations in effect at the time of the study, which required 1 teacher per 12 for four-yea- old children and 1 teacher per 15 children for five-year-old children (National Resource Center for Health and Safety in Child Care, 2004). At the time of this study maximum group size was not regulated in Iowa (National Resource Center for Health and Safety in Child Care).

Individual Children's Experiences Descriptive Statistics

Descriptive statistics for each individualized ECERS-R subscale, total, and item score are presented in Table 3.4. These data are reported for the total sample, as well as separately for children with and children without disabilities. The individualized ECERS-R total mean

Table 3.3

Means (SD) Children's Individual Experiences Scores

Variables	All children *M (SD)*	Without disabilities *M (SD)*	With disabilities *M (SD)*
ECERS-R total score	5.10 (.94)	NA	NA
Activities subscale	4.19 (.88)	NA	NA
Program Structure subscale	5.55 (1.34)	NA	NA
Interaction subscale	5.38 (1.51)	NA	NA
Language/Reasoning subscale	5.50 (1.30)	NA	NA
Individualized ECERS-R total	4.07 (.81)	4.00 (.82)	4.13 (.82)
Curriculum subscale	3.16 (.78)	3.20 (.76)	3.12 (.81)
Interaction subscale	5.24 (1.30)	5.17 (1.44)	5.31 (1.17)
Language subscale	3.69 (1.09)	3.63 (1.11)	3.73 (1.10)

NA = Comparisons were not made because the variables are program rather than individual level variables.

score for entire sample was 4.07 (*SD* = .81) while the mean for children without disabilities was 4.00 (*SD* = .82) and the mean for children with disabilities was 4.13 (*SD* = .82). Overall, average scores on the individualized ECERS-R were somewhat lower than those on the ECERS-R. Note that only 10% of the children were rated as having good quality experiences (individualized ECERS-R score between 5.00 to 7.00), 83% were rated as having mediocre quality experiences (individualized ECERS-R score between 3.00 and 4.99), and 7% were rated as having poor quality experiences (individualized ECERS-R score between 1.00 and 2.99). The largest discrepancies between global quality and individual experience quality occurred in language ratings.

Children's Problem Behavior Descriptive Statistics

In general, parents and teachers reported few problem behaviors, but reported slightly more problem behaviors for children with disabilities. Table 3.5 displays the means and *t* statistics for these comparisons. Parents of children with disabilities reported more

Table 3.4

Means (SD) for Individual ECERS-R Items

Individualized ECERS-R items	ECERS-R	All Children	Without disabilities	With disabilities
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*
Language/reasoning	5.00 (1.43)	3.05 (1.38)	3.10 (1.47)	3.00 (1.31)
Encouraging children to communicate	6.00 (1.35)	4.25 (1.58)	4.07 (1.44)	4.43 (1.72)
Using language to develop reasoning skills	4.97 (2.03)	3.42 (1.25)	3.37 (1.30)	3.47 (1.22)
Informal use of language	5.67 (1.61)	4.00 (1.46)	4.00 (1.62)	4.00 (1.31)
Dramatic play	4.67 (1.05)	2.62 (1.63)	2.63 (1.65)	2.60 (1.63)
Nature/science	2.70 (1.36)	2.75 (1.35)	2.83 (1.39)	2.67 (1.32)
Math/number	4.90 (1.23)	4.73 (1.56)	4.83 (1.60)	4.63 (1.54)
Early literacy	NA[a]	3.12 (1.73)	3.20 (1.71)	3.03 (1.77)
Use of TV, video, computers	3.95 (1.77)	4.50 (1.55)	4.41 (1.71)	4.59 (1.40)
Promoting diversity	3.73 (.90)	1.57 (1.18)	1.57 (1.19)	1.57 (1.19)
Discipline	5.43 (1.66)	5.70 (1.38)	5.67 (1.47)	5.73 (1.31)
Staff child interaction	5.70 (2.12)	4.82 (1.94)	4.27 (1.87)	5.07 (1.72)
Interactions among children	5.63 (1.72)	5.20 (1.78)	5.27 (1.87)	5.13 (1.72)
Free play	5.47 (1.60)	4.82 (1.83)	4.77 (1.74)	4.87 (1.94)
Group time	5.80 (1.61)	5.83 (1.29)	5.80 (1.30)	5.87 (1.31)
Disability	5.93 (1.40)	5.58 (1.86)	NA[b]	5.58 (1.86)

[a] Because early literacy item was added to individualized ECERS-R scale there is no comparison from the ECERS-R

[b] Disability item is only scored if the child being observed has a disability

externalizing behaviors and more total problem behaviors than did parents of children without disabilities. When children's problem behavior scores were categorized into either the clinical or borderline range, no statistically significant difference between children withand without disabilities was found. For internalizing behaviors, about 13% of children scored in the borderline range and 3% scored in the clinical range while for externalizing behaviors, about 12% of children scored in the borderline range and 8% scored in the clinical

Table 3.5

Differences in Problem Behavior of Children With and Without Disabilities

Child's Problem Behavior	All Children *M (SD)*	Without disabilities *M (SD)*	With disabilities *M (SD)*	t[a]
Parent Report				
Internalizing behaviors	48.53 (10.20)	47.62 (10.50)	49.45 (9.99)	-.68
Externalizing behaviors	47.72 (12.39)	43.66 (11.99)	51.79 (11.61)	-2.63*
Total problem behaviors	47.24 (10.70)	44.31 (10.14)	50.17 (10.61)	-2.15*
Teacher Report				
Internalizing behaviors	41.97 (10.34)	38.83 (10.66)	45.00 (9.20)	-2.38*
Externalizing behaviors	37.93 (9.97)	34.17 (7.81)	41.57 (10.59)	-3.04*
Total problem behaviors	37.69 (8.36)	34.28 (7.93)	41.00 (7.49)	-3.35*

[a] t statistic compares the individualized ECERS-R scores of children with disabilities and those children without disabilities

*$p < .05$.

range. For total problem behaviors, about 5% of children scored in the borderline range and 7% scored in the clinical range.

Teachers rated children with disabilities higher on internalizing, externalizing, and total problem behavior than those children without disabilities. When categorical variables indicating whether children's problem behaviors fell into the clinical or borderline range were considered, there was no statistically significant difference between children with disabilities and those children without disabilities. For internalizing behaviors about 3% of children scored in the borderline range and 3% scored in the clinical range, while for externalizing behaviors none of the children scored in the borderline range or the clinical range. For total problem behaviors, about 2% of children scored in the borderline range and none scored in the clinical range. Due to the strong relationships among externalizing, internalizing, and total problem behavior scores (r = .84 to .93), a total problem behavior

score for parent report and a total problem behavior score for teacher report was used for subsequent analyses.

Correlational Analyses

Pearson correlations among scores for children's individual experiences (individualized ECERS-R) and global quality (ECERS-R) are presented in Table 3.6. Generally, global quality scores were positively associated with children's individual experiences scores for the total sample.

Next, whether relations between global quality and children's individual experiences were similar for children with and without disabilities were examined (see Table 3.6). In

Table 3.6

Intercorrelations for ECERS-R and Individualized ECERS-R Scores

	ECERS-R				
Individualized ECERS-R	Total	Activities	Program structure	Interaction	Language Reasoning
All children	(*N*=60)				
Total	.75***	.73***	.64***	.63***	.57***
Curriculum	.77***	.75***	.83***	.47***	.83***
Interaction	.71***	.67***	.49***	.74***	.61***
Language	.47***	.47***	.27*	.44***	.30*
Children without disabilities	(*n*=30)				
Total	.78***	.72***	.56**	.77***	.68***
Curriculum	.74***	.68***	.82***	.43*	.58***
Interaction	.70***	.65***	.37*	.85**	.68***
Language	.46**	.39*	.14	.54**	.36
Children with disabilities	(*n*=30)				
Total	.72***	.74***	.72***	.49**	.46**
Curriculum	.80***	.83***	.85***	.50**	.53**
Interaction	.73***	.70***	.65***	.62***	.55**
Language	.47**	.53**	.39*	.35	.24

*$p < .05$ **$p < .01$ ***$p < .001$.

general, global quality scores were moderately to highly related to children's individual experiences regardless of disability status.

When family income, maternal education, child's age, child's gender, and child's problem behavior were controlled, the correlations between global quality and children's individual experiences were similar to the correlations for all children as well as the two groups of children: children with disabilities and those children without disabilities. Correlations among control variables (family income, maternal education, child's age, child's gender, and child's problem behavior), predictor variables (global quality and disability status), and outcome variables (quality of individual experiences) are presented in Table 3.7. Parent report of child's problem behavior was related to the children's individual Total and Language subscale scores. Children who were rated as having fewer problem behaviors were rated higher on individual experiences. Teacher report of children's problem behavior was related to global quality, disability status, and parents' report of child's problem behavior. Children rated as having more problem behaviors were in classrooms of higher global quality, were more likely to have a disability, and were rated higher on problem behaviors by their parents.

Analyses to Test Research Questions

For research question (a): do play/learning activities and experiences in early childhood settings differ for children with disabilities and without disabilities, *t*-tests and MANCOVAs were conducted. *T*-tests indicated that these groups did not differ on total, subscale, or item scores. Based on correlational analyses, a MANCOVA was conducted to

Table 3.7

Intercorrelations Among Control, Predictor, and Outcome Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. ECERS-R	1.00	.76**	.77**	.71**	.47**	-.07	.00	-.22	.27*	-.10	.001	-.08
2. Individualized ECERS-R		1.00	.83**	.84**	.80**	-.02	.08	-.29*	.05	.13	.01	-.11
3. Curriculum dimension			1.00	.54**	.57**	-.17	-.01	-.23	.19	-.07	-.22	.34*
4. Interaction dimension				1.00	.58**	-.01	.04	-.14	.04	.18	.20	.16
5. Language dimension					1.00	.08	.03	-.35**	-.13	.32*	.13	-.01
6. Child's gender						1.00	-.07	-.19	-.25^{+}	.03	-.02	.03
7. Disability status							1.00	.28*	.41**	.01	.08	.03
8. Child's problem behavior (parent report)								1.00	.45**	-.02	.01	.16
9. Child's problem behavior (teacher report)									1.00	.02	-.07	-.15
10. Child's age in months										1.00	.06	.13
11. Maternal education											1.00	.63**
12. Family income												1.00

*$p < .05$ **$p < .01$ ***$p < .001$.

test for group effects while controlling for children's problem behavior. A MANCOVA was selected due to the high correlation among the dependent variables, individualized ECERS-R subscale and item scores. The Wilks' Λ of .54 was not significant, F (5, 57) = 1.25,indicating that there was no difference in individualized ECERS-R means between the two groups of children, even after controlling for children's problem behavior. The effect size was η^2 = .47, ns. Another MANCOVA was conducted to test for group effects while controlling for children's problem behavior and global quality. The Wilks' Λ of .54 was not significant, F (5, 57) = 1.20, indicating that after controlling for global quality in addition to children's problem behavior there was no difference in individualized ECERS-R means between the two groups of children. The effect size was η^2 = .47, ns. The individual univariate F tests on each of the dependent variables are presented in Table 3.8.

To address research questions b and c, what is the relationship between global quality and individual experiences and does the relationships between global quality and quality of individual experiences differ for children with and without disabilities, a series of stagewise regressions were conducted. The results of the regression analyses are presented in Table 3.9. For each regression Step 1 and Step 2 were identical. Step 1 of the regression controlled for maternal education and family income. Maternal education and family income were controlled to account for differences in the quality of care and experiences that may be due to parent's selection of higher quality care. Due to the high correlation between maternal and paternal education (r = .85), the education of the primary caregiver, in this case the mother, was included in regression analyses. In Step 2, the subset of child characteristics (child's age, child's gender, and child's problem behavior reported by teacher and parent) were entered, thus testing child's characteristics' unique contribution to children's individual experiences

Table 3.8

Multivariate Analyses of Covariance (MANCOVA) for Children's Individual Experiences

Variable	*t*	F^a (5, 57)	Partial Eta Squared
Language/reasoning	.28	.37	.02
Encouraging children to communicate	-.90	.11	.07
Using language to develop reasoning skills	-.31	.85	.00
Informal use of language	.00	.33	.03
Dramatic play	.08	.36	.02
Nature/science	.48	.74	.00
Math/number	.49	.09	.08
Early literacy	.37	.68	.01
Use of TV, video, computers	-.39	.28	.03
Promoting diversity	.00	.43	.02
Discipline	-.19	.54	.01
Staff child interaction	-1.00	.12	.07
Interactions among children	.29	.70	.01
Free play	-.21	.84	.00
Group time	-.20	1.00	.00
Disability	NA	NA	
Individualized ECERS-R total	-.57	3.04	.08
Curriculum subscale	-.33	.00	.00
Interaction subscale	.02	1.11	.03
Language subscale	-.21	1.09	.03

[a] *F* statistic compares the individualized ECERS-R scores of children with disabilities and those children without disabilities while controlling for global quality and children's problem behavior.

over and above the contributions of maternal education and family income. These variables were entered before child care quality because they are believed to have a relationship to the child's experiences.

For research question b, Step 3 of the regression early childhood global quality (ECERS-R score) was added. Step 3 was necessary as a prerequisite for testing interactions in Step 4 in order to determine the direct effect of global quality and to account for the fact

that children's individual experiences were nested within classrooms. The moderating effects of child's age, child's gender, and child's problem behavior were tested in Step 4 by adding in four product terms representing the interaction between global quality and child characteristics. Interaction terms were entered last to assess whether the impact of global quality of care on children's individual experiences varies as a function child's age, gender, and problem behavior. Together, the predictors explained between 50% and 69% of the variance in children's individual experiences.

The results at Step 3 show that, with maternal education and family income controlled, global quality was a positive predictor of children's overall individual experiences ($\beta = .80$, $p < .001$). At Step 3, global quality was a positive predictor over and above child characteristics ($\beta = .80$, $p < .001$) with an effect size of $R^2 = .66$. Therefore, 66% of the variance in children's individual experience ratings can be accounted for by global quality scores after controlling for family and child characteristics. Consistent with the correlational analyses, parents' report of children's problem behavior contributed to the variance in children's overall individual experiences. When parents reported fewer problem behaviors, children had higher quality individual experiences. At Step 4, none of the four product terms (reflecting the interaction between child characteristics and global quality) contributed to the variance in children's overall individual experiences ($R^2 = .69$). Therefore, the relationship between global quality of the early childhood setting and activities experienced by individual children did not vary by child's characteristics of age, gender, or problem behavior. A similar pattern of relationships was found when the Interaction and Language experience dimensions were considered individually as outcome variables.

When the Curriculum experience subscale was the outcome variable, a different pattern emerged. The results at Step 2 show that, with maternal education and family income controlled, parents' report of child's problem behavior was a negative predictor (β = -.42, p < .01) while teachers' report was a positive predictor (β = .35, p < .01) of curriculum experiences. In this model, there was an effect size of R^2 = .30, indicating that 30% of the variance in the Curriculum experience subscale was accounted for by child characteristics after controlling for family characteristics with child's problem behavior as significant predictors. At Step 3, global quality was a positive predictor over and above child characteristics (β = .76, p < .001) with an effect size of R^2 = .73. Although the change in R^2 only approached significance at Step 4, two of the product terms accounted for a significant portion of variance in child's curriculum experiences—the term representing the interaction between global quality and parents' report of problem behavior and the term representing the interaction between global quality and teachers' report of problem behavior. Child problem behavior and classroom quality interact in accounting for variance in the child's individual experiences over and above any additive combination of their separate effects. When teacher reported more problem behavior in classrooms of higher global quality (ECERS-R score), individualized ECERS-R Curriculum experience ratings were higher. Children in classrooms of lower global quality had similar curriculum experiences, regardless of teacher's report of problem behaviors. Children in classrooms of higher global quality had similar curriculum experiences regardless of parent report of problem behaviors; however, when parents reported fewer problem behaviors in lower quality classrooms, curriculum experiences were higher.

Table 3.9

Summary of Stagewise Regression Analyses for Variables Predicting Children's Individual Experiences

	Individualized Experiences Total			Curriculum Experiences			Interaction Experiences			Language Experiences		
	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2
Step 1		.03			.11*			.05			.04	
Maternal Education	.18			.08			.20			.26		
Family Income	-.21			-.38*			.05			-.15		
Step 2		.18	.15		.30**	.19*		.12	.07		.25*	.20*
Child's age (A)	.09			-.06			.07			.29*		
Child's gender (G)	-.12			-.21			-.14			-.01		
Child's problem behavior (parent report) (BP)	-.42**			-.42**			-.26			-.37*		
Child's problem behavior (teacher report) (BT)	.23			.35**			.13			.04		
Step 3		.66***	.48***		.73***	.43***		.65***	.52***		.46***	.21***
Global quality (GQ)	.80***			.76***			.84***			.53***		
Step 4		.69***	.04		.78***	.05+		.66***	.01		.50***	.05
GQ X A	.02			.02			.00			-.06		
GQ X G	.22			.05			.19			.14		
GQ X BP	-.17			-.20*			-.05			-.18		
GQ X BT	.16			.23**			.00			.21		

+ $p < .10$, *$p < .05$ **$p < .01$ ***$p < .001$.

For research question c, in Step 3 of the regression, the predictor variable of disability status was entered, thus testing disability status' unique contribution to children's individual experiences over and above maternal education, family income, child's age, child's gender, and child's problem behavior. In Step 4 of the regression, early childhood global quality (ECERS-R score) was entered. The moderating effects of child's age, child's gender, child's problem behavior, and disability status were tested in Step 5 by adding in four product terms representing the interaction between global quality and child characteristics including disability status. Interaction terms were entered to assess whether the impact of global quality on children's individual experiences varies as a function child's age, gender, problem behavior, and disability status. The results of the 5 step analyses are shown in Table 3.10. At all steps, child problem behavior scores and global quality score (ECERS-R), which are continuous variables, were centered around their means while child's gender was dummy coded. This was done to facilitate interpretation of the interaction terms and to control for multicollinearity (Aiken & West, 1991). Together, the predictors explained between 54% and 78% of the variance in children's individual experiences.

After controlling for maternal education, family income, child characteristics and global quality, the final regression analysis found no relation between disability status and quality of children's experiences (Step 3; $\beta = .14$, ns) or for any of the three experience subscales. Effect sizes ranged from $R^2 = .12$ to .30, ns. None of the Step 5 interactions reached significance. Therefore, the relationships between global quality of early childhood settings and quality of care and activities experienced by individual children do not differ for children with and without disabilities. In conclusion, early childhood global quality had the

Table 3.10

Summary of Stagewise Regression Analyses for Variables Predicting Children's Individual Experiences for All Children Including Disability Status

	Individualized Experiences Total			Curriculum Experiences			Interaction Experiences			Language Experiences		
	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2
Step 1		.03			.11			.05			.04	
Maternal Education	.18			.08			.20			.26		
Family Income	-.21			-.38*			.05			-.15		
Step 2		.18	.15^{+}		.30**	.19*		.12	.07		.25*	.20*
Child's age (A)	.02			-.06			.07			.29*		
Child's gender (G)	.23			-.21			-.14			-.01		
Child's problem behavior (parent report) (BP)	.01			-.42**			-.26			-.37*		
Child's problem behavior (teacher report) (BT)	.02			.35*			.13			.04		
Step 3		.19	.02		.30*	.00		.12	.00		.27*	.02
Disability status (D)	.14			.03			.03			.15		
Step 4		.69***	.50***		.73***	.43***		.65***	.53***		.48***	.22***
Global quality (GQ)	.82***			.76***			.84***			.54***		
Step 5		.73***	.04		.78***	.05		.67***	.01		.54***	.05
GQ X A	-.02			.01			-.03			-.07		
GQ X G	.20			.04			.18			.13		
GQ X BP	-.15			-.20^{+}			-.03			-.18		
GQ X BT	.19^{+}			.24*			.03			.21		
GQ X D	-.10			-.02			-.08			.05		

$^{+}p < .10$, $*p < .05$ $**p < .01$ $***p < .001$.

biggest effect on children's individual experiences, explaining 48 to 73% of the variance in children's individual experiences after controlling for family and child characteristics.

Discussion

The two overarching aims of this study were to determine the relationship between global quality of early childhood center-based settings and the quality of children's individual experiences in those settings and to determine if there were differences between the experiences of children with and without disabilities in those settings. To these ends, we observed children directly in their early care and education classroom. Few researchers have compared the care and education experiences of children with disabilities and those without disabilities within the context of global quality (Kontos et al., 2002). Our matched comparison design allowed us to examine similarities and differences in experiences for children in the same classroom.

In this study, global quality was the strongest predictor of the quality of children's individual experiences. This relationship did not vary based on individual child characteristics, including disability status. Results of the current study highlight the importance of several aspects of early child care and education quality. First, individual children's experiences were positively related to the level of global classroom quality; therefore, in classrooms that offered more developmentally appropriate practices there was less likelihood to be a great amount of variability among each child's experiences in care. As would be expected, children's individual experiences were in part, dependent on the global classroom ratings and did not exceed those ratings. Not surprisingly, when global quality ratings were poor, individual children invariably had poor quality experiences. But disappointingly, participation in good quality classrooms did not ensure that individual

children experienced activities and interactions likely to enhance their competence, especially in the area of language reasoning. Almost 55% of the classrooms were rated as having good global quality and 45% were rated mediocre quality. Conversely, a majority of children were rated as having mediocre experiences while only 10% of the children were rated as having good experiences and 7% were rated as having poor quality experience.

The largest gap between global quality and individual experience quality occurred in language ratings. Unfortunately, it is unclear from this study why there was a discrepancy between language ratings. One explanation may be that is was more difficult for teachers to implement quality language experiences for individual children than other experiences. Teachers may not realize the variation among children's language skills and use of literacy items and, therefore, are less likely to plan experiences that are individualized for different level of skills. Language based experiences (i.e., Encouraging children to communicate, Using language to develop reasoning skills, Books and pictures, and Early literacy), may be even more important for children with disabilities. Children with language disabilities have more difficulty gaining the emergent literacy skills that are crucial for success in reading and writing (Watkins, 1996). Likewise, children with emotional/behavioral disabilities, who have difficulty attending to tasks or find it challenging to sit still and attend during group activities have fewer opportunities for language and literacy activities and are at risk for delays in literacy and language development (Lonigan et al., 1999). Their problem behaviors may also be a result of a lack of language skills. This disparity is especially concerning since a majority of children with an IEP or receiving intervention services had needs in language. Continued training in this area is needed even for early childhood professionals in classrooms rated as good. Together, these findings highlight that while good global quality may be a

supportive context for quality individual experiences, good global quality by itself does not ensure quality programming for each child.

Second, children with and without disabilities did not differ in their individual experiences in care, even after controlling for other family and child characteristics. Additionally, disability status did not play a role in the quality of individual experiences or in the relationship between global quality and individual experiences. Therefore, children with and without disabilities participated in the same types of learning and play activities. This supports previous research that found children with disabilities and those without displayed similar types and levels of play (File, 1994; File & Kontos, 1993; Hestenes & Carroll, 2000). However, these findings contradict research that has found that type of activities differed for children with disabilities and those without (Kontos et al., 1998) and that children with disabilities engage in less social interaction with peers than children without disabilities (Bronson, Hauser-Cran, & Warfield, 1995; Guralnick, 1999; Guralnick & Groom, 1988). One explanation for differences in this study may be attributed to differences in study procedures. Previous research focused more specifically on interactions and measured the rate and time spent in successful interactions with teachers and peers.

The lack of differences between the two groups in this study could be attributed to a number of factors. In general, a majority of the classrooms were rated as good to excellent. Classroom quality in the present study was higher than those reported in earlier research studies examining quality of both inclusion and non-inclusive classroom. Hegland and Oesterreich (2005) found that global quality in both high inclusion and low inclusion public preschools in Iowa fell in the mediocre quality range. Likewise, a recent study of early care and education classrooms in the Midwest reported that quality of classrooms for preschool

children was rated as mediocre (Raikes et al, 2006). One explanation for this discrepancy may be the fact that most of the programs in the current study were accredited by NAEYC. The NAEYC accreditation process involves a comprehensive, on-going self-assessment process, which reflects on practices and needed improvements. Those that participate in this self-assessment and improvement process are more likely to be of higher quality.

Other researchers have found that inclusive settings are of higher quality than noninclusive settings (Buysse, Wesley, Bryant, & Gardner, 1999; Hestenes et al., 2003; Knoche, Peterson, Edwards, & Jeon, 2006). Programs of higher quality may be more aware of the importance of inclusion and actively seek to enroll children with disabilities. Alternately, parents of children with disabilities, independently or working with IEP transition teams, may select higher quality settings or perhaps settings improve as children with disabilities are enrolled and teachers are challenged to meet individual needs. Another factor was the high level of teacher education and training among participating teachers. All teachers held a bachelor's degree and 7 held a graduate degree. This is a greater proportion of teachers with college degrees compared to other research studies, which found that approximately 15% of individuals providing care for young children held bachelor's degrees (Fuller & Strath, 2001; Raikes et al., 2002). When comparing inclusive and noninclusive classrooms, Hestenes and colleagues (2003) found that classrooms with children with disabilities had teachers with more education, which was related to higher levels of global quality.

Third, the biggest difference between the sample of children with disabilities and the sample of children without disabilities was found in the level of problem behavior reported.

Although, in general, parents and teachers reported few problem behaviors, parents and teachers reported slightly more problem behaviors for children with disabilities. This difference became important when we examined how child's problem behavior was related to children's individual experiences. When parents reported fewer problem behaviors, children had higher quality individual experiences. Although parent and teacher report of problem behaviors were positively related, there was no relationship between a child's individual experiences and problem behavior ratings by teachers. One explanation for this difference may be that parents in this sample tended to rate their children higher on problem behaviors than teachers and reported a greater variability in the problem behaviors. Teachers tended to view the children in their care a little more homogenously. Perhaps the children rated the highest on problem behavior were more likely to demand more attention. Therefore, it is likely that the teachers in this sample may have been more aware of children's needs and whether they were fully participating in the learning and play activities that were available. As a result, the teacher who reports a higher incidence of problem behaviors in a high quality classroom may be more likely to ensure the child is initiating his/her own play and modify group time to fit his/her behavioral needs. After child's problem behavior was controlled, disability status did not affect individual experiences.

Fourth, when examining children's overall individual experiences, family and children characteristics were not significant predictors. Global quality remained a strong predictor and did not vary by any of the child characteristics including disability status. However, when the Curriculum dimension of children's individual experiences (i.e., Nature/science, Math/number, Use of computer/TV, Free play, and Group time) was examined separately a somewhat different pattern emerged. The interaction between

children's problem behavior and global quality could indicate that higher global quality may act as a buffer for children with more problem behaviors. Parents of children with problem behaviors may be more selective in choosing care and therefore, choose higher quality settings for their children. Teachers in higher quality classrooms may be more likely to accept a child with problem behaviors and make a more conscious effort to involve the child in learning experiences.

When parent ratings of child problem behavior were examined, a different relationship emerged. Although children in higher quality classrooms had similar experiences regardless of problem behavior, when parents reported fewer problem behaviors, children in lower quality classrooms had higher quality curriculum experiences. Teachers in lower quality settings may be less skilled at working with children with problem behaviors, and therefore, children who have fewer problem behaviors are likely to be less of a challenge for teachers and able to take advantage of the activities and experiences offered. Social competence may also be indicator of the classroom's quality of support for these problem behaviors (Pianta, 1999).

Due to the small sample size (11 teachers) and relatively small variation in quality of care, the reported differences that emerged are more likely to be a result of individual teacher practices (e.g., teacher goals, notions about how and what children should be taught) rather than quality of care. Previous work has found that preschool teachers in programs with similar quality ratings and of the same school vary greatly in articulated program objectives and educational philosophy of the curriculum (Vedder & Bouwer, 1996; Wishard, Shivers, Howes, & Ritchie, 2003). Information about teacher practices and curriculum unfortunately was not systematically collected in the current study. These results should be interpreted with

caution. Interactions approached significance and perhaps with a larger sample these results would be significant.

In conclusion, the relationships between global classroom quality and quality of care and activities experienced by individual children do not differ for children with and without disabilities. Early childhood classroom quality had the biggest effect on children's individual experiences, explaining 48% to 73% of the variance in children's individual experiences after controlling for family and child characteristics.

Limitations

Several limitations of this research should be acknowledged. Foremost is the selective nature of our sample. The study is limited by its nonexperimental design. Children were not assigned randomly to classrooms, nor randomly selected for the study. Nevertheless, this investigation represents a naturalistic report of children and their classrooms. This sample size was relatively small (11 early childhood classrooms) and was limited to only one location in the country. With a larger sampling of early childhood programs and more children observed, greater diversity in the data may have been present. Additionally, global classroom quality was relatively high; the ECERS-R scores indicated higher quality ratings than might be expected from a randomly selected sample of early care and education settings around the country. The percentage of programs (55%) involved in the current study that met or exceeded the minimal criterion for a good or developmentally appropriate setting (i.e., a mean ECERS-R score of 5 or higher) was substantially higher than percentages reported in studies of other early childhood environments and a large percent of classrooms (82%) were NAEYC accredited.

Researchers have found that the average quality of center-based child care services for preschool children is mediocre (Hegland, Peterson, Jeon, & Oesterreich, 2003, Helburn & Howes, 1996; Love et al., 1996; Raikes et al., 2006), and one major study finding only 14% of preschool classrooms to be of good quality (Cost, Quality and Child Outcomes Study Team, 1995). Consequently, teachers in this sample reported a higher level of education and training than would be expected in a representative sample of early care and education programs in Iowa as well as the Midwest. In this sample 100% of the teachers held a bachelor's degree compared to 17% of a random sample of Iowa child care providers (Hegland et al., 2003).

Although the sample was comprised of children with a variety of disabilities, most were mild disabilities. It is unclear what differences would emerge with both a sample that is more homogenous group of children with disabilities (i.e., with more similar disabilities) or with a sample that is more heterogeneous in degree of disabilities (i.e., more moderate to severe disabilities).

Although one of the strengths of the current study is the use of observations assessment, observations of global quality and individual children's experiences were completed by the same observer. Therefore, the high correlations between global quality and children's experiences could be in part due to shared variance. Great care, however, was taken to ensure observers were highly reliable with one another and remained reliable during the course of data collection. The current data are also limited by the fact that children were observed in their classroom on only a single day. Ideal conditions would include multiple assessment of the classroom environment to increase reliability of measurement (NICHD 2003b). It is possible that the experiences of individual children vary more from day to day than does

overall classroom quality. In an earlier study, researchers examined stability of individual ECERS-R scores with a small sample (n = 10). Ten children in the sample were observed twice using the individualized items. Time between observations ranged from 6 to 27 days with a mean of 17 days. The difference in total individualized ECERS-R score between time 1 and time 2 was .99. Paired t-tests revealed there was a difference ($t = 5.122$, $p =. 001$) between average scores at time 1 and time 2. However, the scores were moderately correlated ($r = .54$). Examining individual items revealed different results. Paired t-tests revealed a difference between time 1 and time 2 on only one item: Group Time ($t = 2.33$, $p = .045$). This small sample offers some insight to the stability of examining individual children's experiences. However, it is unclear how accurate these "snapshots" of children's experiences are on a day to day basis. More research is needed to explore the stability or variability of individual children's experiences.

The findings regarding the role of child's problem behavior suggest that there may be other characteristics of children that could influence the relationship between global quality and individual experiences. Child and teacher ethnicity and teacher practices have been found to contribute to children's experiences in care (Wishard et al., 2003). Additionally, differences in individual experiences among children may be due more to the child's temperament and "goodness of fit" between teacher and child (De Schipper, Tavecchio, Van IJzendoorn, & Van Zeijl, 2004). Future research in children's individual experiences in care should focus on classroom dynamics such as these within the early childhood care and education culture.

Despite these caveats, this study offers a valuable opportunity to examine children with and children without disabilities in the same classrooms, exposed to the same activities

and experiences. This study provides further evidence that although global quality determines the highest level of the quality of experiences a child has in that setting, there is no assurance that every child in the classroom is participating in good quality interactions and activities that may be available. It is important to examine individual children's experience in early care and education settings, as well as whether and how those experiences may differ from global classroom quality to understand children's classroom experiences and activities and may provide a means to link children's classroom experiences with developmental outcomes more accurately. It is crucial to ensure that every child receives appropriate care and education as a basis for making decisions about programming for individual children, as well as for intervention planning and evaluation at both the child and program level.

Conclusions

Early childhood global quality had the largest effect on children's individual experiences after controlling for family and child characteristics. Furthermore, it appears that the relationship between global quality and children's individual experiences do not vary by child characteristics, including disability status. There was some evidence, however, that the relationship between global quality and individual experiences may vary by children's problem behaviors. This study suggests that although global quality determines the highest level of the quality of experiences a child has in that setting, there is no assurance that every child in the classroom is participating in good quality interactions and activities that may be available. Therefore, ratings of children's individualized experiences used in conjunction with ratings of global quality can provide additional information about children's experiences and could inform individualized activity planning efforts.

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CHAPTER 4: GENERAL CONCLUSIONS

The purpose of this research was to study children's individual experiences and activities in inclusive early care and education settings. More specifically, the relationship between global quality and quality of care and education experienced by individual children with or without disabilities as well as the differences in the quality of individual experiences between children with disabilities and those without was examined. Sixty 4- to 5-year-old children (30 with disabilities and 30 without disabilities) were observed in 11 early childhood inclusive classrooms in central Iowa to provide data for this research.

Chapter 2 provided a review of the literature and discussion of evaluating early care and education programs. The focus of early childhood program evaluation is driven by the emphasis on accountability of programs as well as the increase in use of standards for early care and education programs. Often programs only examine quality from one perspective and neglect essential contributions of the program, in particular children's individual experiences in care, to children's development. The purpose of the chapter was to present multiple approaches to measuring quality in early childhood programs and provide a framework for utilizing multiple methods for program evaluation purposes as well as address the importance of examining quality of care from the more proximal perspective of children's individual experiences in care. The ecological framework presented was adapted from Wolery's (2004) proposed ecology of the classroom, drawing on Bronfenbrenner's (1977, 1979, 1992), Horowitz's (Horowitz, 1987; Horowitz & Haritos, 1998) and Dunst's (Dunst et al., 2001; Dunst, Trivette, Humphries, Raab, & Roper, 2001) previous work because the model recognizes the multifaceted and interwoven components that can comprise quality and acknowledges the variation of experiences and learning opportunities in the early childhood

environment. The ecological framework presented in this research portrays the early childhood program as a system that can be characterized by structural, process, and global features (Aytch, Cryer, Bailey, & Selz, 1999) encouraging program evaluators to examine multiple aspects of quality in connection with one another. The framework also encouraged the examination of children's individual experiences as the center of the framework. Without the inclusion of children's individual experiences, teachers and program administrators may inadvertently ignore individual children's interests and strengths which are crucial for program development and individualized planning. Teachers and administrator may miss out on why a particular child is struggling in their care, why that child withdrew from the program.

The research presented in Chapter 3 utilized the proposed ecological framework in Chapter 2 to examine individual experiences of children with and without disabilities. The two overarching aims of this study were to determine the relationship between global quality of early childhood center-based settings and the quality of children's individual experiences in those settings and to determine if there were differences between experiences of children with and without disabilities. To these ends, we observed children directly in their early care and education classrooms. A matched comparison design allowed us to examine similarities and differences in experiences for children in the same classroom. Global quality was the strongest predictor of the quality of children's individual experiences. Individual children's experiences were positively related to the level of global classroom quality. This relationship did not vary based on individual child characteristics, including disability status. There was some evidence, however, that the relationship between global quality and individual experiences may vary by children's behavior problems.

Recommendations

The regular and systematic evaluation of early care and education programs is critical to ensure that quality care and education that promotes the development of each and every child in their care is being delivered. The following provides recommendations for program evaluators, administrators, teachers, researchers, and policy makers.

1. Early care and education quality should be examined from multiple perspectives using multiple methods. Assessment tools should examine the interactive features of the program such as the nature of children's interaction with peers and teachers within program quality (e.g., the physical elements of the classroom, societal structure of the classroom, and administrative characteristics of the program). A child's experience is also shaped by the relationship that teachers and parents have; therefore, how the program serves individual families should also be addressed. The current research indicates that while overall program quality is important for children's experiences in care, participation in good quality classrooms does not ensure that individual children experienced activities and interactions that are likely to enhance their competence. Therefore, to truly understand how early care and education impacts children and families and to improve early care and education, a comprehensive approach to evaluation and research that includes children's individual experiences must be implemented.

2. Teachers should use information about children's individual experiences to better plan individualized learning goals for children. What makes a program good from the perspective of the individual children's experiences is an important perspective for making decisions regarding curriculum for young children, especially for children with disabilities

and special needs. Developmentally Appropriate Practices guidelines depend on individualizing program activities to accommodate the different strengths, interests, and needs of each child (Bredekamp & Copple, 1997). Therefore, with on-going monitoring of children's individual experiences teachers will be able to pinpoint areas of weakness in children's experiences as well as strengths, allowing for more purposeful programming for individual children. Those teachers who know how to embed individual goals in the typical curriculum for children who are having difficulty (including children with disabilities), are more likely to create positive environments that can lead to increased learning (McGill-Franzen & Goatley, 2001).

3. Information about children's individual experiences should be used by administrators to evaluate teachers' performance and individualization of care and education. The current research indicates that the largest gap between global quality and individual experience quality occurred in language ratings. This indicates that continued training in providing interesting and individual language experiences for children is needed even for early childhood professionals in classrooms rated as good.

4. Additional research is needed to explore the stability or variability of individual children's experiences. The current data are limited by the fact that children were observed in their classroom on only a single day. It is unclear how much children's experiences vary from day to day. Therefore, children's individual experiences should be assessed on an ongoing basis. Ongoing monitoring can assist teachers in evaluating the learning centers and activities they provide as well as the interests of individual children so the teacher can be sure that the child is experiencing all aspects of the center. This information is invaluable for

teachers in individualizing learning experiences that are critical for development, especially for children who have a disability or exhibit challenging behaviors.

5. Additional research is needed to examine the effect of disability status in different levels of quality. In the current study, disability status did not play a role in the quality of individual experiences or in the relationship between global quality and those experiences. However, this sample size was relatively small (11 early childhood classrooms) and was limited to only one location in the country. A majority of the classrooms in the current study were rated as good to excellent and were accredited by NAEYC. Additionally, teachers in this sample reported a higher level of education and training than would be expected in a representative sample of early care and education programs in Iowa as well as the Midwest (Hegland, Peterson, Jeon, & Oesterreich, 2003). Although the sample was comprised of children with a variety of disabilities, most were mild disabilities. It is unclear what differences would emerge with both a sample that is more homogenous group of children with disabilities (i.e., with more similar disabilities) or with a sample that is more heterogeneous in degree of disabilities (i.e., more moderate to severe disabilities). With a larger sampling of early childhood programs and more children observed, greater diversity in the data may have been present and the results may have been different.

6. The influence of child and family characteristics on children's individual experiences in care needs to be further explored. The findings regarding the role of child's behavior suggest that there may be other characteristics of children that could influence the relationship between global quality and individual experiences. Child and teacher ethnicity and teacher practices have been found to contribute to children's experiences in care (Wishard, Shivers, Howes, & Richie, 2003). Additionally, differences in individual

experiences among children may be due more to temperament and "goodness of fit" between teacher and child (De Schipper, Tavecchio, Van IJzendoorn, & Van Zeijl, 2004).

7. It is unclear from the current data how children's individual experiences relate to child outcomes. Further research examining how children's individual experiences within the context of program quality is needed to determine the practical or pedagogical significance of the statistical associations between global or composite measures of classroom quality and children's developmental status.

Taken together, the above recommendations can assist early childhood professionals create environments that will provide learning activities appropriate for *all* children and encourage positive interaction. Information about the experiences of children with disabilities in care and educational settings is vital to understand how typical childhood free-play activities, a primary medium for learning in developmentally appropriate early childhood settings, can be part of a viable early childhood special education.

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APPENDIX A. HUMAN SUBJECTS APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Compliance
Vice Provost for Research and
Advanced Studies
2810 Beardshear Hall
Ames, Iowa 50011-2036
515 294-4566
FAX 515 294-7288

TO: Carolyn Clawson

FROM: Human Subjects Research Office

PROJECT TITLE: "Experiences of Children With or Without Disabilities in Early Childhood Programs"

RE: IRB ID No.: 03-583

APPROVAL DATE: June 18, 2003 **REVIEW DATE:** June 18, 2003

LENGTH OF APPROVAL: 1 year **CONTINUING REVIEW DATE:** June 17, 2004

TYPE OF APPLICATION: ☒ **New Project** ☐ **Continuing Review**

Your human subjects research project application, as indicated above, has been approved by the Iowa State University IRB #1 for recruitment of subjects not to exceed the number indicated on the application form. All research for this study must be conducted according to the proposal that was approved by the IRB. If written informed consent is required, the IRB-stamped and dated Informed Consent Document(s), approved by the IRB for this project only, are attached. Please make copies from the attached "masters" for subjects to sign upon agreeing to participate. The original signed Informed Consent Document should be placed in your study files. A copy of the Informed Consent Document should be given to the subject.

If this study is sponsored by an external funding source, the original Assurance Certification/Identification form has been forwarded to the Office of Sponsored Programs Administration.

The IRB must conduct **continuing review** of research at intervals appropriate to the degree of risk, but not less than once per year. Renewal is the PI's responsibility, but as a reminder, you will receive notices at least 60 days and 30 days prior to the next review. **Please note the continuing review date for your study.**

Any **modification** of this research project must be submitted to the IRB for review and approval, prior to implementation. Modifications include but are not limited to: changing the protocol or study procedures, changing investigators or sponsors (funding sources), including additional key personnel, changing the Informed Consent Document, an increase in the total number of subjects anticipated, or adding new materials (e.g., letters, advertisements, questionnaires). Any future correspondence should include the IRB identification number provided and the study title.

You must promptly report any of the following to the IRB: (1) **all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems involving risks** to subjects or others.

Your research records may be audited at any time during or after the implementation of your study. Federal and University policy require that all research records be maintained for a period of three (3) years following the close of the research protocol. If the principal investigator terminates association with the University before that time, the signed informed consent documents should be given to the Departmental Executive Officer to be maintained.

Research investigators are expected comply with the University's Federal Wide Assurance, the Belmont Report, 45 CFR 46 and other applicable regulations prior to conducting the research. These documents are on the Human Subjects Research Office website or are available by calling (515) 294-4566.

Upon completion of the project, a Project Closure Form will need to be submitted to the Human Subjects Research Office to officially close the project.

C: HDFS

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Compliance
Vice Provost for Research and
Advanced Studies
2810 Beardshear Hall
Ames, Iowa 50011-2036
515 294-4566
FAX 515 294-7288

TO: Carolyn Clawson

FROM: Ginny Austin, IRB Administrator

PROJECT TITLE: *"Experience of Children With or Without Disabilities in Early Childhood Programs"*

RE: IRB ID No.: 03-583

APPROVAL DATE: May 18, 2004 **REVIEW DATE: May 18, 2004**

LENGTH OF APPROVAL: 1 year **CONTINUING REVIEW DATE: June 17, 2005**

TYPE OF APPLICATION: ☐ **New Project** ☒ **Continuing Review**

Your human subjects research project application, as indicated above, has been approved by the Iowa State University IRB #1 for recruitment of subjects not to exceed the number indicated on the application form. All research for this study must be conducted according to the proposal that was approved by the IRB. If written informed consent is required, the IRB-stamped and dated Informed Consent Document(s), approved by the IRB for this project only, are attached. Please make copies from the attached "masters" for subjects to sign upon agreeing to participate. The original signed Informed Consent Document should be placed in your study files. A copy of the Informed Consent Document should be given to the subject.

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Upon completion of the project, a Project Closure Form will need to be submitted to the Human Subjects Research Office to officially close the project.

C: HDFS
Gayle Luze

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Compliance
Vice Provost for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

TO: Carolyn Clawson

FROM: Human Subject Research Compliance Office

PROJECT TITLE: Experiences of children with or without disabilities in early childhood programs
RE: IRB ID No.: 03-583

APPROVAL DATE: June 14, 2005 **REVIEW DATE: June 14, 2005**

LENGTH OF APPROVAL: One year **CONTINUING REVIEW DATE: June 17, 2006**

TYPE OF APPLICATION: ☐ **New Project** ☒ **Continuing Review**

Your human subjects research project application, as indicated above, has been approved by the Iowa State University IRB #1 for recruitment of subjects not to exceed the number indicated on the application form. All research for this study must be conducted according to the proposal that was approved by the IRB. If written informed consent is required, the IRB-stamped and dated Informed Consent Document(s), approved by the IRB for this project only are attached. Please make copies from the attached "masters" for subjects to sign upon agreeing to participate. The original signed Informed Consent Document should be placed in your study files. A copy of the Informed Consent Document should be given to the subject.

The IRB must conduct **continuing review** of research at intervals appropriate to the degree of risk, but not less than once per year. Renewal is the PI's responsibility, but as a reminder, you will receive notices at least 60 days and 30 days prior to the next review. **Please note the continuing review date for your study**.

Any **modification** of this research project must be submitted to the IRB for review and approval, prior to implementation. Modifications include but are not limited to: changing the protocol or study procedures, changing investigators or sponsors (funding sources), including additional key personnel, changing the Informed Consent Document, an increase in the total number of subjects anticipated, or adding new materials (e.g., letters, advertisements, questionnaires). Any future correspondence should include the IRB identification number provided and the study title.

Approval letter
Page 2
Clawson

You must promptly report any of the following to the IRB: (1) **all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems involving risks** to subjects or others.

Your research records may be audited at any time during or after the implementation of your study. Federal and University policy require that all research records be maintained for a period of three (3) years following the close of the research protocol. If the principal investigator terminates association with the University before that time, the signed informed consent documents should be given to the Departmental Executive Officer to be maintained.

Research investigators are expected to comply with the University's Federal Wide Assurance, the Belmont Report, 45 CFR 46 and other applicable regulations prior to conducting the research. These documents are on the Human Subjects Research Office website or are available by calling (515) 294-4566.

Upon completion of the project, a Project Closure Form will need to be submitted to the Human Subjects Research Office to officially close the project.

C: HDFS
Gayle Luze

APPENDIX B. PARENT LETTER

Dear Parent:

We want to invite you and your child to participate in a research project being conducted by the Human Development and Family Studies Department at Iowa State University. The purpose of this project is to learn about children's early childhood education and care experiences. The focus will be on the play and learning activities in which individual children participate while in an early childhood education or care setting. A number of early childhood education and care programs in central Iowa were chosen to be included in this study, and we hope you agree to be part of this study.

We are asking your permission to allow your child to be included in this study. Your participation in this study would involve completing a survey about your family (i.e., education, occupation), type of child care used, your perceptions of the child care your child receives, and your child's behavior. Your child will be observed twice at his or her early childhood education and/or care classroom, for approximately 3 hours. Your child's teacher will also be asked to complete a survey regarding your child's behavior and play and learning styles and needs. All information concerning your child will be kept confidential. He/she will be assigned a code number so his/her name will not appear on any document of the study. Your child's name, your name, and any identifying information about your child or your family will not appear on any report of the study. This project will not interfere with your child's learning in any way. We will gather information by observing normal, everyday routines that occur in any preschool or childcare program, such as snacks, play and group time with other children. We will observe the child's interactions with adults and other children. Observers will be trained to be unobtrusive during their observations. Extreme care will be taken not to single out individual children during observations. If you agree to participate, you may withdraw from the study at any time without affecting your relationships with your early childhood program or Iowa State University.

We hope that you will agree to participate and allow your child to participate in this study, as we think the new information will improve educational experiences for many children and teachers. If you have further questions, please contact Ms. Clawson at (515)294-6990.

Thank you for your consideration.

Sincerely,

Carolyn Clawson, MS
Research Assistant
Iowa State University

Gayle Luze, Ph.D.
Assistant Professor
Iowa State University

APPENDIX C. CONSENT FORMS

C-1. Informed Consent Document for Parents

Title of Study: Experiences of Children With or Without Disabilities in Early Childhood Programs
Investigators: Carolyn Clawson, M.S. and Gayle Luze, Ph. D.

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION
The purpose of this study is to learn about children's early childhood education and care experiences. You are being invited to participate in this study because you have a child between the ages of 4 and 6 years old who is enrolled in a participating early childhood program.

DESCRIPTION OF PROCEDURES
If you agree to participate in this study, a trained observer will visit your child's classroom two to three times over a two week period to collect the observational data. The observation will last for about 2 to 3 hours at each visit. Your child's teacher will be asked about your child's play and learning experiences and needs. You will also be asked to complete a phone interview taking about 15 minutes to complete. During the study you may expect the following study procedures to be followed. You will be called and asked questions about your family (i.e., education, occupation), type of child care used, your perceptions of the child care your child receives, and your child's behavior. All information is confidential. You may skip any question that you do not wish to answer or that makes you feel uncomfortable. We will gather information by observing normal, everyday routines that occur in any preschool or childcare program, such as snacks, play and group time with other children. We will observe the child's interactions with adults and other children. Observers will be trained to be unobtrusive during their observations. Extreme care will be taken not to single out individual children during observations.

RISKS
There are no foreseeable risks at this time from participating in this study.

BENEFITS
If you decide to participate in this study there may be no direct immediate benefit to you It is hoped that the information gained in this study will benefit early childhood education programs and professionals by providing information about children's activities, interactions with peers, teachers, and objects, and overall classroom quality. This information will contribute to the understanding how early childhood programs best help children learn. The proposed research will increase our understanding of how quality of care and learning activities for individual children may differ from one another. Information about the experiences of children in educational settings is vital to understand how engagement in typical childhood free-play activities, a primary vehicle for learning in an early childhood setting, can be a part of a practical early childhood approach. Outcomes of this project include an observational tool that can be used in applied settings for monitoring children's engagement with materials, children's experiences with peers and teachers, and conducting program evaluations.

COSTS AND COMPENSATION
You will not have any costs from participating in this study. You will not be compensated for participating in this study.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled. If your child verbally or physically express at any time he or she does not want to take part in the classroom observations, he or she will be dropped from the sample.

CONFIDENTIALITY

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken. Subjects will be assigned a unique code number and will be used on forms instead of their name. All individual identitfiers will be separated from the data themselves as quickly as possible, and only the code number will be used to identify cases in the research database. All hard copy data will be maintained in locked cabinets and/or locked rooms. All records of observations, family surveys, teacher surveys, and child behavior forms will remain confidential. No identyinfy factors will be used to code participant files. No informaiton concerning subject names will be gathered or used in data anlaysis. Only principal investigators will have acces to study records. If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study. For further information about the study contact Carolyn Clawson at (515)294-6990 or Gayle Luze at (515294-4045. If you have any questions about the rights of research subjects or research-related injury, please contact the Human Subjects Research Office, 2810 Beardshear Hall, (515) 294-4566; austingr@iastate.edu or the Research Compliance Officer, Office of Research Compliance, 2810 Beardshear Hall, (515) 294-3115; dament@iastate.edu

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SUBJECT SIGNATURE

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the signed and dated written informed consent prior to your participation in the study.

Child's Name (printed) _____ Child's date of birth: _____

_____ _____

(Signature of Parent/Guardian) (Date)

Phone number to be used for phone interview only

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

_____ _____

(Signature of Person Obtaining Informed Consent) (Date)

C-2. Informed Consent Document for Program Directors

Title of Study: Experiences of Children With or Without Disabilities in Early Childhood Programs
Investigators: Carolyn Clawson, M.S. and Gayle Luze, Ph. D.

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to learn about children's early childhood education and care experiences. You are being invited to participate in this study because you are a director of an early childhood program for children between the ages of 4 and 6 years old.

DESCRIPTION OF PROCEDURES

If you agree to participate in this study, consent forms will be sent home with parents from a preschool classroom in your center. Parents will be asked to give consent to allow their child to be observed in the classroom. After parent permission is obtained, a trained observer will visit the preschool aged classroom in your early childhood program two to three times (dependent on the number of children recruited from the classroom) over a two week period to collect the observational data and observe the participating children as they play and learn. The observation will last for about 2 to 3 hours at each visit. During the study you may expect the following study procedures to be followed. The classroom teacher of the room that will be observed will receive a survey made up of questions about education and training as well as a survey about each participating child's child behavior (about 4 children) and learning needs. During observations, we are interested in seeing how each participating child spends a normal day. We will gather information by observing normal, everyday routines that occur in any preschool or childcare program, such as snacks, play, and group time with other children. We will observe the child's interactions with adults and other children. Observers will be trained to be unobtrusive during their observations. Extreme care will be taken not to single out individual children during observations. The study is not designed to evaluate individual teachers or classrooms.
You will also be asked questions about the number of staff, children, and classrooms in your center taking about ten minutes to complete.

RISKS

There are no foreseeable risks at this time from participating in this study.

BENEFITS

If you decide to participate in this study there may be no direct immediate benefit to you. It is hoped that the information gained in this study will benefit early childhood education programs and professionals by providing information about children's activities, interactions with peers, teachers, and objects, and overall classroom quality. This information will contribute to the understanding how early childhood programs best help children with and without disabilities learn. The proposed research will increase our understanding of how quality of care and learning activities for individual children with disabilities and those at risk vary from those of their typically developing peers. Information about the experiences of children with disabilities in inclusive care and educational settings is vital to understand how engagement in typical childhood free-play activities, a primary vehicle for learning in an early childhood setting, can be a part of a practical early childhood special education approach. Outcomes of this project include an observational tool that can be used in

applied settings for monitoring children's engagement with materials, children's experiences with peers and teachers, and conducting program evaluations.

COSTS AND COMPENSATION
You will not have any costs from participating in this study. You will not be compensated for participating in this study.

PARTICIPANT RIGHTS
Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

CONFIDENTIALITY
Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken. Subjects will be assigned a unique code number and will be used on forms instead of their name. All individual identitfiers will be separated from the data themselves as quickly as possible, and only the code number will be used to identify cases in the research database. All hard copy data will be maintained in locked cabinets and/or locked rooms. All records of observations, family surveys, teacher surveys, and child behavior forms will remain confidential. No identyinfy factors will be used to code participant files. No informaiton concerning subject names will be gathered or used in data anlaysis. Only principal investigators will have access to study records. If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS
You are encouraged to ask questions at any time during this study. For further information about the study contact Carolyn Clawson at (515)294-6990 or Gayle Luze at (515294-4045. If you have any questions about the rights of research subjects or research-related injury, please contact the Human Subjects Research Office, 2810 Beardshear Hall, (515) 294-4566; austingr@iastate.edu or the Research Compliance Officer, Office of Research Compliance, 2810 Beardshear Hall, (515) 294-3115; dament@iastate.edu

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SUBJECT SIGNATURE
Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the signed and dated written informed consent prior to your participation in the study.

Subject's Name (printed) _____

_____ _____
(Subject's Signature) (Date)

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

_____ _____

(Signature of Person Obtaining Informed Consent) (Date)

C-3. Informed Consent Document for Classroom Teachers

Title of Study: Experiences of Children With or Without Disabilities in Early Childhood Programs
Investigators: Carolyn Clawson, M.S. and Gayle Luze, Ph. D.

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION
The purpose of this study is to learn about children's early childhood education and care experiences. You are being invited to participate in this study because you are a director of an early childhood program for children between the ages of 4 and 6 years old.

DESCRIPTION OF PROCEDURES
If you agree to participate in this study, consent forms will be sent home with parents from your classroom. Parents will be asked to give consent to allow their child to be observed in the classroom. After parent permission is obtained, a trained observer will visit your classroom two to three times (dependent on the number of children recruited from the classroom) over a two week period to observe the participating children as they play and learn. The observation will last for about 2 to 3 hours at each visit. During the study you may expect the following study procedures to be followed. You will receive a survey made up of questions about your education and training as well as a survey about each participating child's behavior and learning needs (about 4 children). These surveys will take a total of about an hour to complete. You may skip any question that you do not wish to answer or that makes you feel uncomfortable. During observations, we are interested in seeing how each participating child spends a normal day. We will gather information by observing normal, everyday routines that occur in any preschool or childcare program, such as snacks, play, and group time with other children. We will observe the child's interactions with adults and other children. Observers will be trained to be unobtrusive during their observations. Extreme care will be taken not to single out individual children during observations. The study is not designed to evaluate individual teachers or classrooms.

RISKS
There are no foreseeable risks at this time from participating in this study.

BENEFITS
If you decide to participate in this study there may be no direct immediate benefit to you. It is hoped that the information gained in this study will benefit early childhood education programs and professionals by providing information about children's activities, interactions with peers, teachers, and objects, and overall classroom quality. This information will contribute to the understanding how early childhood programs best help children with and without disabilities learn. The proposed research will increase our understanding of how quality of care and learning activities for individual children with disabilities and those at risk vary from those of their typically developing peers. Information about the experiences of children with disabilities in inclusive care and educational settings is vital to understand how engagement in typical childhood free-play activities, a primary vehicle for learning in an early childhood setting, can be a part of a practical early childhood special education approach. Outcomes of this project include an observational tool that can be used in applied settings for monitoring children's engagement with materials, children's experiences with peers and teachers, and conducting program evaluations.

COSTS AND COMPENSATION
You will not have any costs from participating in this study. You will not be compensated for participating in this study.

PARTICIPANT RIGHTS
Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

CONFIDENTIALITY
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To ensure confidentiality to the extent permitted by law, the following measures will be taken. Subjects will be assigned a unique code number and will be used on forms instead of their name. All individual identitfiers will be separated from the data themselves as quickly as possible, and only the code number will be used to identify cases in the research database. All hard copy data will be maintained in locked cabinets and/or locked rooms. All records of observations, family surveys, teacher surveys, and child behavior forms will remain confidential. No identyinfy factors will be used to code participant files. No informaiton concerning subject names will be gathered or used in data anlaysis. Only principal investigators will have access to study records. If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS
You are encouraged to ask questions at any time during this study. For further information about the study contact Carolyn Clawson at (515)294-6990 or Gayle Luze at (515294-4045. If you have any questions about the rights of research subjects or research-related injury, please contact the Human Subjects Research Office, 2810 Beardshear Hall, (515) 294-4566; austingr@iastate.edu or the Research Compliance Officer, Office of Research Compliance, 2810 Beardshear Hall, (515) 294-3115; dament@iastate.edu

****

SUBJECT SIGNATURE
Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the signed and dated written informed consent prior to your participation in the study.

Subject's Name (printed) _____

_____ _____
(Subject's Signature) (Date)

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

_____ _____

(Signature of Person Obtaining Informed Consent) (Date)

APPENDIX D: PARTICIPANT SURVEYS

D-1. Director Survey

Please answer the following questions in the space provided. Thank you!

1. Number of classrooms in program:
    a. Infant classrooms (0-18 months) _____
    b. Toddler classrooms (18-30 months) _____
    c. Early Childhood classrooms (2 ½ to 5 years) _____
2. Number of full time staff: _____
3. Number of part time staff: _____
4. Number of volunteers staff: _____
5. Total number of children enrolled in program: _____
6. Program licensed by state? _____
7. NAEYC Accreditation? _____
8. Other Accreditation? _____
    a. Specify: _____

D-2. Teacher Survey

Please answer the following questions in the space provided. Thank you!

How long have you been a teacher for _____? _____ weeks _____months _____years

How long have you been a teacher for _____? _____ weeks _____months _____years

How long have you been a teacher for _____? _____ weeks _____months _____years

How long have you been a teacher for _____? _____ weeks _____months _____years

How long have you been a teacher for _____? _____ weeks _____months _____years

How long have you been a teacher for _____? _____ weeks _____months _____years

1. How many full time staff work in your classroom? _____

2. How many part time staff work in your classroom? _____

3. How many volunteer staff work in your classroom? _____

4. How old is the oldest child in your classroom currently? _____

5. How old is the youngest child in your classroom currently? _____

6. How many children are enrolled in your classroom?_____

7. On a typical day, how many children attend your classroom?

8. How many children in your classroom have special needs? Include children how have been designated as having a physical, emotional, language, learning or behavioral disability, or who is receiving special education or related services in the classroom or somewhere else.
_____ Number of children with special needs

9. How many children in your classroom do you feel are at risk for the following problems: vision problems; hearing problems; problems communicating with peers and teachers; cognitive problem solving difficulties; problems getting along with peers (aggressive, rejected or withdrawn); problems controlling his or her emotions; problems using arms, hands, legs or feet; speech and language problems; social skill problems; physical problems; behavior problems; emotional/mental health problems; learning problems; or other.

_____ Number of children at risk

For the following questions, please circle your response. Your responses will help us learn more about the people who provide early education services. All of your responses will be confidential.

1. What is your highest level of education?
    1. Less than High School
    2. High School or GED
    3. Some Training Beyond High School but not a Degree
    4. One year Vocational Training Certificate
    5. Two Year Degree
    6. Four Year Degree
    7. Graduate Training or Graduate Degree

2. If you have a degree beyond high school, what best describes your area of study?
    1. Child Development/Early Childhood Education
    2. Other area, child-related
    3. Other area, not child-related

3. If you have a four year degree or more, do you have an early childhood teaching endorsement or license?
    1. Yes
    2. No

4. Have you completed a Child Development (CDA) credential?
    1. Yes
    2. No

5. Circle the programs which you have completed a multi-day training program?
    1. Creative Curriculum
    2. High/Scope Training
    3. Montessori Training
    4. Parents as Teachers
    5. Project Construct
    6. West Ed training/Program for Infant and Toddler Caregivers (PITC)
    7. Child Net
    8. Every Child Reads
    9. Welcome to Child Care Series: Child Care Center Staff
    10. Welcome to School Age Child Care
    11. Other, please specify

6. Have you completed CPR or First AID certification/recertification within the past 2 years?
    1. CPR only
    2. First Aid only
    3. Both CPR and First Aid
    4. Neither CPR nor First Aid

7. In the past year, did you do any of the following?
   1. Attend a regional, state, or national conference for early childhood training
   2. Attend a workshop or meeting in your community for child care
   3. Formally participate in the T.E.A.C.H. program
   4. Formally participate in the Wage$ or WIN program
   5. Receive college credit for a child care-related class
   6. Utilize the services of a Resource and Referral Agency

8. How many clock hours of child care-related training did you complete during the past year?
   1. 11 or fewer
   2. 12-23
   3. 24 or more

9. Do you regularly conduct a formal conference on at least an annual basis with the parents of children you care for, to discuss the children's development?
   1. Yes
   2. No

10. Do you follow a curriculum as a guide to daily program activities?
   1. Yes, Specify name of curriculum _____
   2. No

11. Do you have a way of documenting each child's developmental progress?
   1. Yes, Specify how_____
   2. No

12. Does your program participate in the USDA/Child and Adult Care Food Program (CACFP)?
   1. Yes
   2. No
   3. Don't Know

13. Is your program a Head Start Program?
   1. Yes
   2. No

14. Does you child care center have a formal commitment or contract to follow the Head Start performance standards?
   1. Yes
   2. No
   3. Don't Know

15. Is your program currently accredited, by any of the following national recognized child care accrediting bodies?
   1. National Association for the Education of Young Children (NAEYC)
   2. Other, please specify: _____
   3. Don't know

16. Are you a member of
    1. National Association for the Education of Young Children (NAEYC)
    2. Iowa Association for the Education of Young Children (IAEYC)
    3. National Head Start Association
    4. Other. Please specify: _____

17. During this calendar month, are you (in your class) caring for any children whose child care will be paid by federal/state child care subsidies?
    1. Yes
    2. No
    3. Don't Know

18. During this calendar month, are you (in your class) serving any children who have verified disabilities?
    1. Yes
    2. No
    3. Don't Know

19. In the past 6 months, has anyone talked with you about your development in the child care field?
    1. Yes
    2. No

If so, who?
    1. Your director
    2. Other, please specify position: _____

20. How many children are in your own class at peak time in a typical day? _____

21. Do you work as a child care provider
    1. Less than 15 hours a week
    2. 15 to less than 30 hours a week
    3. 30 to less than 45 hours a week
    4. 45 hours a week or more

22. What is your role?
    1. Head (or Co-) Teacher
    2. Assistant Teacher
    3. Other, Please specify:

23. What do you consider your race?
    1. White
    2. Hispanic/Latino
    3. Black/African American
    4. American Indian or Alaska Native
    5. Asian
    6. Other, please specify:

24. What is your age? _____

25. Income is an important feature to learn about child care providers. What is your personal annual income before taxes from child care?
    1. Less than $12,500
    2. $12,500 to less than $16,000
    3. $16,000 to less than $20,000
    4. $20,000 to less than $25,000
    5. $25,000 to less than $30,000
    6. $30,000 or more

26. Do you receive health insurance from your child care employer?
    1. Yes
    2. No

27. What type of program do you work in:
    1. Full day Center
    2. Preschool

D-3. Parent Survey

Please fill or circle your responses in the space provided. Thank you.

1. What is child's birth date?

2. What is child's sex?

3. What is your relationship to child?
   Biological mother
   Biological father
   Foster, adoptive, step mother
   Foster adoptive, step-father
   Grandmother
   Grandfather
   Other Relative (specify)_____
   Other (specify) _____

4. How long has _____ cared for your child?

5. On average, how many hours per week does your child attend _____?
   _____ hours

6. How old was child when he/she first had regular child care experiences with others besides immediate family members? _____ weeks _____months _____years

7. What types of child care arrangements has child participated in since then?
   Preschool
   Child Care Center
   Family care home
   Care by a relative
   Care by a non-relative
   Other (please specify)

8. In addition to _____-, how many other child care providers do you have at this time for child? Do not include occasional babysitters or persons who care for your child so you could enjoy an evening out, but do count regular child care that you use so you can work or attend school.
_____ number of providers

9. Please indicate the total number of usual hours per week each of the following other child care provider spends with your child.

_____ Preschool
_____ Child Care Center
_____ Family care home
_____ Care by a relative
_____ Care by a non-relative
_____ Other (please specify)

11. Since she/she began child care, how many different child care providers, including your current provider, have your child had? Do not include occasional babysitters or persons who care for your child so you could enjoy an evening out, but do count regular child care that you use so you can work or attend school. _____ number of providers

12. Please indicate how many of the total number of child care arrangements your child has used, as reported in the previous question, fall into each of the following types of categories.

_____ Child care center
_____ Family care home
_____ Care by a relative
_____ Care by a non-relative
_____ Other (please specify)

13. All things considered, how would you grade the quality of the care your child is receiving from his/her current caregiver?

A+ Perfect
A Excellent
B Good
C fair
D Poor
E Bad
F Awful
Not sure

14. How would you grade the quality of the teachers interactions with children?

A+ Perfect
A Excellent
B Good
C Fair
D Poor
E Bad
F Awful
Not sure

15. How would you grade the quality of the teachers interactions with you as a parent?

A+ Perfect
A Excellent
B Good
C Fair
D Poor
E Bad
F Awful
Not sure

16. How would you grade the quality of the materials available to your child at his or her early childhood program?

A+ Perfect
A Excellent
B Good
C Fair
D Poor
E Bad
F Awful
Not sure

17. How would you grade the quality of the activities such as dramatic play, outdoor play, and art that your child participates in while in his or her early childhood program?

A+ Perfect
A Excellent
B Good
C Fair
D Poor
E Bad
F Awful
Not sure

18. Has your child been identified as having any developmental problems or special needs?

Yes
No

If yes, what types of services does your child receive? _____

19. What is the highest level of education that you have completed?

Less than a high school diploma
High school diploma or GED
Some training or education beyond high school
2-year college degree
4-year college degree
Graduate school classes
Graduate school degree

20. What is the highest level of education that your spouse/partner has completed?

Less than a high school diploma
High school diploma or GED
Some training or education beyond high school
2-year college degree
4-year college degree
Graduate school classes
Graduate school degree
No spouse/partner

21. What is your occupation? _____

22. What is you spouse/partner's occupation? _____

23. Please circle the category below that describes your total annual household income from all sources and household members before taxes.

Less than $12,500
$12,500 to less than $16,000
$16,000 to less than $20,000
$20,000 to less than $25,000
$25,000 to less than $30,000
$30,000 to less than $35,000
$35,000 to less than $40,000
$40,000 to less than $45,000
$45,000 to less than $50,000
$50,000 to less than $55,000
$55,000 to less than $60,000
$60,000 to less than $65,000
$65,000 and over

APPENDIX E. INDIVIDUALIZED ECERS-R TECHNICAL REPORT

Individualized ECERS-R Technical Report

Carolyn L. Clawson

Iowa State University

Hyun-Joo J. Jeon,

University of California Los Angeles

Carla A. Peterson, Gayle J. Luze

Iowa State University

Judy J. Carta, & Jane B. Atwater

Juniper Gardens Children's Project

University of Kansas

Initial Adaptation of Individualized ECERS-R Items

Items from the Early Childhood Environmental Rating Scale-Revised Edition (ECERS-R; Harms, Clifford, & Cryer, 1998) were adapted to facilitate collection of information about the quality of children's individual play and learning experiences while in early childhood programs. The adaptation was part of local research efforts undertaken at Iowa State University and the University of Kansas in conjunction with the Early Head Start Longitudinal Research Study. It was adapted for use in conjunction with the ECERS-R, a widely used instrument that provides a rating of the global quality of an early childhood classroom. The rationale guiding initial adaptation of ECERS-R was that while a rating of the global quality of an early childhood classroom provides information regarding the opportunities available to participating children, that rating might not reflect accurately the actual experiences of individual children. This may be especially true for children, who

present special challenges to their teachers (e.g., children with developmental delays or children who engage in challenging behaviors). Ratings on ECERS-R items often reflect the availability of materials or activities, thus providing a rating of the overall potential quality of the experience available in the environment. In contrast, ratings on individualized ECERS-R items reflect the quality and actual use of materials, activities, and interactions of the individual child in the classroom.

Adaptation of items began with a review of all ECERS-R items. Individual items that could be adapted to focus on an individual child were retained for use. For example, an item designed to facilitate rating of a physical feature of the classroom (e.g., sufficient indoor space and furnishings for children) was dropped from further consideration because the assumption was made that classroom furniture and/or play spaces would be available to all children. In contrast, items that reflected child interactions with adults or peers (e.g. staff show respect for children) and items that reflected participation in curricular experiences (e.g., staff read books to children informally) were retained. Items were then adapted to focus on the actual experiences of the observed child. An additional item was developed to provide further information about early literacy experiences. This resulted in 16 items (see item descriptions). To rate an item, the observer is asked to focus on the target child and make the rating based on that individual child's actual participation and/or experience.

Description of the Individualized ECERS-R items

The 16 items that were adapted facilitate ratings of caregiver-child interactions and children's participation in a variety of curricular activities and/or experiences. Like the ECERS-R, items are presented on a seven-point scale with quality descriptors anchoring four points: 1 (inadequate), 3 (minimal), 5 (good), and 7 (excellent).

The following items were adapted: Language/reasoning; Encouraging children to communicate; Using language to develop reasoning skills, Informal use of language, Dramatic play, Nature/science; Math/number; Early literacy; Use of TV, video, and/or computer; Promoting acceptance of diversity; Discipline; Staff child interactions; Interactions among children; Free play; Group time; and Provisions for children with disabilities. Examples of items include "Language/Reasoning: Target child participates in at least one staff-initiated receptive language activity; Early literacy: Staff talk about sounds or engage target child in some phonemic awareness activities".

Initial Use of the Individualized ECERS-R items

The ECERS-R item were adapted for and used initially as part of local research efforts undertaken at Iowa State University and the University of Kansas in conjunction with the Early Head Start Longitudinal Research Study. Specifically, these research teams were interested in examining the (1) extent to which the experiences of individual children varied from the experiences children typically had within early childhood classrooms and (2) relationships between children's individual experiences and developmental outcomes.

Following initial adaptation, the items piloted, and appropriate revisions were made. The items were used to collect data on eligible children participating in the Early Head Start Longitudinal Research study during 2001, 2002, and 2003.

Piloting

An observer from Iowa State University and an observer from Juniper Gardens Children's Project, trained on general observation techniques and use of the ECERS-R, were instructed on using the individualized items. Observers practiced using the items

independently in early care and education classrooms serving preschool-aged children. Next, these two observers practiced the instrument together discussing items and scoring procedures. They reported back to the instrument developers with suggestions and concerns. Options for improving the instrument were discussed, and appropriate changes were made.

The observers met again to establish estimates of interrater agreement. The observers obtained interrater agreement rates of 86.66% when exact agreement was examined and 100% when agreement within one point on each item was examined. These observers were considered "gold standard" observers, and they each trained additional observers at their respective sites. The gold standard observers/trainers met again before year two data collection (2002) began to reestablish interrater agreement. During this session, the observers obtained interrater agreement rates of 93.75% when exact agreement on each item was examined and 100% when agreement within one point on each item was examined.

Training of Additional Observers

Additional observers were trained on classroom observational procedures in general, as well as on procedures for using the individualized ECERS-R items. Observers practiced using the items in early care and education classrooms. All observers were required to meet the criterion of agreement within one-point on at least 85% of all items prior to actual data collection. Assessment of observer reliability continued during data collection and ranged from 86 to 100% agreement within one point across all observations.

Initial Data Collection

Initial data collected using the individualized ECERS-R items was conducted as part of the Early Head Start Longitudinal Research study in central Iowa and Kansas City,

Kansas. A total of 139 children, participating in the National Early Head Start Longitudinal Research Study, were included in this study; 83 children were from the rural site and 56 were from the urban site. Participants in the larger study were families who had a child born between September, 1995 and September, 1998, and who qualified for EHS services at the time of enrollment into the study. Families were eligible for the EHS program if they met the federal poverty guidelines and included either a pregnant woman and/or a child less than 12 months of age in the family. At the time of observation, all participating children had graduated from Early Head Start services and were enrolled in early childhood programs during the spring prior to kindergarten eligibility. Data were collected in the spring and summer of 2001, 2002, 2003.

To be included in the study, each participating child had to be enrolled in a center-based care and education program. One hundred and thirty-nine children (32% percent of the original EHS study sample from the two sites) attended 107 different early childhood classrooms; 49.5% of these were Head Start classrooms, enrolling 55% of the children. The remainder of the classrooms was child care or preschool settings. Some children observed in this study were nested in the classrooms (40 classrooms each enrolled two children from the sample while 18 classrooms enrolled three children from the sample).

The individualized ECERS-R items were used to collect data only once with the majority of children. The individualized ECERS-R items were used repeated times with some children at the Iowa site to provide information regarding the stability of the measure. Observations using the individualized ECERS-R items were conducted if an observer had to visit a classroom more than once to make observations of multiple children enrolled in the classroom. Due to this criterion, only ten children were observed twice.

Overall Classroom Descriptions

First, ECERS-R scores were calculated for each classroom. ECERS-R scores were used as an anchor against which to compare the range of classroom quality experienced by individual children, as well as a means to classify classrooms according to overall global quality. ECERS-R scores indicated that most children (93%) were enrolled in classrooms of at least mediocre quality. The mean of the ECERS-R for the entire sample was 4.76 (*SD* = 1.06); the ECERS-R mean for rural research site was 5.11 (*SD* = .87) while the ECERS-R mean for urban research site was 4.26 (*SD* = 1.13). Forty-seven percent of the children were in good quality classrooms (a rating above a "5" on the ECERS-R), 46% were in mediocre quality classrooms (a rating of "3" to "5" on the ECERS-R), and only 7% were in poor quality classrooms, (a rating of below a "3" on the ECERS-R).

Next, individualized mean ratings were calculated. Descriptive statistics for each individualized item, as well as the total individualized score are presented in Table 1. These data are reported for the total sample, as well as according to three levels of overall classroom quality as categorized above based on ECERS-R scores. The individuated total mean score for entire sample was 3.93 (*SD* = 1.17) while the mean for rural site was 4.26 (*SD* = .81) and the mean for urban site was 3.44 (*SD* = 1.43). Overall, individualized EECERS-R scores were somewhat lower than those on the ECERS-R. Note that only 19% of the children were rated as having good quality experiences (a rating above a "5"), 57% were rated as having mediocre quality experiences (a rating of "3" to "5"), and 23% were rated as having poor quality experiences (a rating of below a "3").

Table 1

Means and Standard Deviations of Individualized ECERS-R items by Levels of Quality Care (ECERS-R)

Items	Total (N = 138) *M (SD)*	Poor (n =10) *M (SD)*	Mediocre (n = 63) *M (SD)*	Good (n = 65) *M (SD)*
Language/reasoning	2.88 (1.49)	1.00 (0.00)	2.78 (1.33)	2.88 (1.52)
Encouraging children to communicate	4.09 (1.68)	2.20 (0.92)	3.44 (1.31)	5.00 (1.57)
Using language to develop reasoning skills	3.22 (1.72)	1.10 (0.32)	2.75 (1.34)	4.00 (1.73)
Informal use of language	4.34 (1.86)	1.50 (0.85)	3.63 (1.48)	5.47 (1.46)
Dramatic play	2.07 (1.54)	1.30 (0.95)	1.84 (1.26)	2.41 (1.78)
Nature/science	3.31 (1.99)	1.60 (0.70)	2.34 (1.54)	4.51 (1.80)
Math/number	3.97 (2.00)	1.70 (0.95)	3.24 (1.97)	5.03 (1.47)
Early literacy	3.30 (2.20)	2.10 (1.79)	3.16 (2.27)	3.63 (2.13)
Use of TV, video, computers	3.53 (1.78)	1.00 (0.00)	3.00 (1.84)	4.26 (1.37)
Promoting diversity	1.97 (1.26)	1.20 (0.42)	1.87 (1.13)	2.18 (1.40)
Discipline	5.56 (1.61)	3.30 (2.16)	5.11 (1.56)	6.34 (0.96)
Staff child interaction	5.22 (2.14)	1.70 (1.89)	4.75 (2.16)	6.23 (1.27)
Interactions among children	5.12 (2.02)	2.70 (2.31)	4.48 (1.92)	6.11 (1.46)
Free play	4.83 (2.11)	2.50 (0.85)	3.65 (1.84)	6.32 (1.30)
Group time	5.19 (2.19)	1.60 (0.97)	4.30 (2.20)	6.60 (0.81)
Disability [a]	6.39 (1.27)	3.50 (3.54)	6.75 (0.50)	6.65 (0.49)
Total	3.93 (1.17)	1.81 (0.63)	3.38 (0.88)	4.80 (0.59)

Note. [a] item N=23, n=2, 4, and 17 at poor, mediocre, and good quality level, respectively.

Examination of individual ECERS-R item scores indicated good global quality settings did not ensure good individual quality among types of curricular experiences (see Table 1). Overall, discipline strategies used, and interactions among children, as well as interactions between staff and children were all rated as good quality. In addition, children with disabilities apparently were accommodated well in their classrooms. In contrast to this, several items related to the richness of children's curricular experiences (e.g., Language/reasoning, Dramatic play, Early literacy, Promoting acceptance of diversity) generally received ratings reflecting poor or minimal quality.

Individualized ECERS-R items were also examined in relation to ratings of global classroom quality; this examination revealed a pattern of results strikingly different than what would be expected based on the ratings of global quality. Examination of individualized total and item scores by levels of classroom quality revealed that all children in poor quality classrooms were rated as having poor quality individual experiences. However, higher ratings of global quality did not ensure higher ratings for the quality of individual children's experiences. Sixty-five percent of children enrolled in mediocre quality classrooms were rated as having poor quality individual experiences. Although none of the children in good quality classrooms were rated as having poor quality experiences, only 35% were observed participating in good quality experiences.

Data Analyses

There have been ongoing efforts to examine the psychometric properties of the individualized ECERS-R items. According to Nunnally and Bernstein (1994), factor analyses are useful to combine measures into a more meaningful index, but exploratory factor analyses, which are based on empirical relationships among items, can mislead researchers without underlying theoretical background. Therefore, both exploratory factory analyses and confirmatory factor analyses were employed to examine meaningful individualized ECERS-R subscales. Next, conceptual subscales were constructed based on these factor analyses. Then, based on these constructed dimensions, we examined the internal consistency among items within each individualized subscale, as well as interfactor correlations. Descriptive analyses were conducted to examine the congruence between individualized subscale and corresponding ECERS-R subscales. The following describes the process our group completed to arrive at the final subscales of the individualized ECERS-R items.

Reliability

Internal consistency coefficients were calculated using the individualized ECER-R items. For internal consistency and factor analyses, the Provisions for children with disabilities item was eliminated since only 17% of the children observed had disabilities (n = 23), even though a majority of early care and education settings served children with disabilities. The Cronbach alpha coefficient was .88 for the total individualized score. Correlations between each item and the total score ranged from .14 to .77. Squared multiple correlations for each item were above .40 except for four items [e.g., Language/reasoning (r^2 = .25), Early literacy (r^2 = .38), Dramatic play (r^2 = .16), and Promoting acceptance of diversity (r^2 = .14)].

Initially subscales using individualized ECERS-R items were constructed using the ECERS-R subscales as a guide. This resulted in four subscales: Language & Reasoning, Activities, Program Structure, and Interactions. Table 2 presents the items included in the subscales and the internal consistency for each subscale. The Cronbach alpha coefficient was .88 for the total individualized ECERS-R items, while subscale alphas ranged from .58 to .78.

The researchers and graduate students met and discussed alternative subscales created from conceptual groupings. Initial groupings consisted of the following subscales: Interaction, Language Curriculum, and Other Curriculum. Table 3 presents the items included in the subscales and the internal consistency for each subscale. Cronbach alpha coefficients ranged from .69 to .88.

Table 2

Individualized ECERS-R subscales derived from ECERS-R

Language & Reasoning	Activities:	Program Structure:	Interactions:
Language-reasoning Encouraging children to communicate Using language to develop reasoning skills Informal use of language, Early literacy	Dramatic play Math/science Use of TV, video, and/or computers Promoting acceptance of diversity	Free play Group time Provisions for children with disabilities. However, due to limited data on provisions for children with disabilities, that item is not included in the analyses.	Discipline Staff-child interactions Interactions among children
Cronbach alpha = .7817 (N=141)	Cronbach alpha = .5803 (N=116)	Cronbach alpha = .7753 (N=143)	Cronbach alpha = .7588 (N=142)

Table 3

Individualized ECERS-R Subscales Created from Conceptual Groupings

Interaction:	Language Curriculum:	Other Curriculum
Encouraging children to communicate Using language to develop reasoning skills Informal use of language Free play Group time Discipline Staff-child interactions Interactions among children.	Language reasoning Encouraging children to communicate Using language to develop reasoning skills Informal use of language Dramatic play Nature/science Early literacy.	Nature/science Math/number Using langue to develop reasoning skills Use of TV, video, and/or computers Free play
Cronbach alpha =.8830 (N=138)	Cronbach alpha =.7601 (N=138)	Cronbach alpha =.6935 (N=138)

The researchers continued to validate conceptually and mathematically-based subscales that could be used for future analyses with the individualized ECERS-R items. This resulted in an approach that divided the individualized ECERS-R items into two subscales: Interaction/Language Experiences and Curriculum Experiences. Table 4 presents the items included in the subscales and the internal consistency for each subscale. Cronbach alpha coefficients for Interaction/Language Experiences and Curriculum Experiences subscales were .85 and .81, respectively.

Table 4

Individualized ECERS-R Subscales Created from Conceptual Groupings and Reliability Analyses

Interaction/Language Experiences	Curriculum experiences
Encouraging children to communicate Using language to develop reasoning skills Informal use of language Discipline Staff child interactions Interactions among children, group time.	Language reasoning Nature/science Math/number Early literacy Use of TV, video, and/or computers Promoting acceptance of diversity Free play
Cronbach alpha =.8517	Cronbach alpha =.8107

However, after continual discussion it was decided that exploratory and confirmatory analyses would be employed to determine subscales. The following describes the analyses used.

Individualized ECERS-R Subscales

To examine the underlying dimensions of the individualized ECERS-R items and provide factors to utilize for future analyses, confirmatory factor analyses based on exploratory factor analyses and conceptual considerations were employed. The results of principal component extraction factor analysis with varimax rotation identified four factors

accounting for 64% of the variance of the item scores. The first three factors identified were labeled Curriculum, Interaction, and Language. The fourth factor which captured only two items, Promoting acceptance of diversity and Dramatic play, accounted for less than 10 % of the variance of the total score. In addition, two items, Encouraging children to communicate and Using language to develop reasoning skills, did not show distinctive rotated factor loadings among these four factors.

Next, based on results from the exploratory factor analyses, as well as conceptual considerations, a confirmatory factor analysis was conducted using LISREL 8, which allows comparison of several proposed models to a baseline model. Maximum likelihood extraction was used in the confirmatory factor analyses. Based on results of the exploratory factor analysis, the baseline model (Model 1) was a 3-factor model. The Curriculum factor consisted of Free play, Group time, Nature/science, and Math/number items; the Interaction factor included Staff-child interaction, Interactions among children, Informal use of language, and Discipline; and the Language factor included Early literacy and Language/reasoning. However, in this baseline model, Use of TV, video, computers; Encouraging children to communicate; and Using language to develop reasoning skills items were not included. These items were tested in alternative models later because they were not consistent with conceptual and mathematical factors.

Model 2 and Model 3 are alternative models, which compete against the Model 1 to find a better fitting model. Model 2 added Use of TV, video, computers item in the Curriculum factor, whereas Model 3 included this item in the Language factor. In Model 4, the Encouraging children to communicate and Using language to develop reasoning skills items, which did not load on any distinctive factors, were added in the Language factor based

on conceptual consideration. Model 5 is 4-factor model that includes the Promoting diversity and Dramatic play items in a fourth factor.

Table 5 presents goodness-of-fit indicators to compare these models. Results indicate that adding Use of TV, video, computers in the Language factor (Model 2, (χ^2 (1) = 36.67, p < .001), as well as in the Curriculum factor (Model 3, ($\chi^2(1)$= 33.92, p < .001) significantly improved the measurement models. Statistically, Model 2 was a better fit to the data than Model 3 when both were compared to Model 1. However, Model 2a was also acceptable and a better fit with conceptual considerations. Model 4 added Encouraging children to communicate and Using language to develop reasoning skills to the Language factor ; this improved the model significantly (χ^2 (2) = 117.81, p < .001). Model 5, which includes the fourth factor comprised of the Promoting diversity and Dramatic play items improved the fit from Model 4 only marginally ($\chi^2(4)$ = 9.97). Therefore, Model 4 is the most parsimonious and best fitted model among the models compared.

Table 5

Goodness-of-fit Indicators of the Models (N = 109)

Model	*Df*	X^2	X^2/df	$\Delta\chi^2$	Δdf	GFI	AGFI	NFI	PNFI	RMSEA
Model 1	92	279.98	3.04			.73	.65	.60	.52	.14
Model 2	91	243.31	2.64	36.67[a]	1	.78	.71	.65	.56	.12
Model 3	91	246.06	2.71	33.92[a]	1	.77	.70	.65	.56	.12
Model 4	89	128.25	1.44	117.81[b]	2	.87	.82	.82	.69	.06
Model 5	85	118.28	1.39	9.97[c]	4	.87	.82	.83	.67	.06

Note. Model 1: baseline model which consist of 3 factors without Use of TV item. Model 2: 3 factors with Use of TV item in Language factor. Model 3: 3 factors with Use of TV item in Curriculum factor. Model 4: 3 factors with Encouraging communication and Using language to develop reasoning skills in Language factor. Model 5: 4 factors with Promoting diversity and Dramatic play item.

[a] Comparison with Model 1

[b] Comparison with Model 2

Table 6 presents factor loadings of each item on 3 factors and squared multiple correlations (communalities) of each item for Model 4. Magnitudes of factor loadings were satisfactory. However, squared multiple correlations of 2 items (Language/reasoning and Early literacy item) were below .30, which indicates that less than 30% of variances in these 2 items were explained by the factor. The reason for such low squared multiple correlations may be that these items had relatively low means and less variability than other items. Correlations between these 3 factors are presented in Table 6. Magnitudes of correlations were high and significant (.60 - .75) but were not so high as to determine that the ME Scale is unidimensional. Internal consistency was calculated for these dimensions, and Cronbach's alpha coefficients for each of the three dimensions were also satisfactory (see Table 6).

Table 6

Factor Loadings for the Individualized ECERS-R Items

	Factor			
Items	Curriculum	Interaction	Language	r^2
Group time	.83			.69
Free play	.72			.52
Math/number	.67			.45
Nature/science	.63			.39
Use of TV, video, computers	.58			.34
Informal use of language		.88		.77
Staff child interaction		.74		.55
Discipline		.72		.52
Interactions among children		.65		.43
Encouraging children to communicate			.75	.57
Using language to develop reasoning skills			.73	.53
Language/reasoning			.45	.21
Early literacy			.39	.16
Internal consistency reliability				
Cronbach's alpha	.82	.84	.68	
Factor correlations				
Curriculum	--	.66***	.60***	
Interaction		--	.75***	
Language			--	

* $p < .05$ ** $p < .01$ ***$p < .001$

Based on these factor analyses, 3 subscales (Curriculum, Interaction, and Language) were constructed and used in further analyses. Comparisons of the means of the individualized ECERS-R subscales (Curriculum, Interaction, and Language) by global quality of care (good, mediocre, and minimal) are presented in Table 7. All children enrolled in poor quality child care were rated as having poor quality individual experiences. The means of the Curriculum and Interaction subscales were similar to the mean levels of global classroom quality, however, the mean of the Language dimension was in the mediocre range even for children enrolled in good quality classrooms. This indicates that despite this global rating of good classroom quality, at least some children enrolled in these classrooms did not necessarily participate in experiences likely to stimulate optimal language and literacy development.

Table 7

Descriptive Statistics of Individual ECERS-R subscales by overall quality

Subscales	N	*M*	SD	Minimum	Maximum
Curriculum					
Good	65	5.36	.71	3.60	7.00
Mediocre	63	3.32	1.29	1.00	6.80
Minimal	10	1.74	.50	1.00	2.50
Interaction					
Good	65	6.04	.87	3.50	7.00
Mediocre	63	4.49	1.34	1.00	7.00
Minimal	10	2.30	1.45	1.00	2.50
Language					
Good	65	3.97	1.12	1.00	6.50
Mediocre	63	3.03	1.12	1.00	6.00
Minimal	10	1.60	.54	1.00	2.50

Stability of Scores

Stability of individual ECERS-R scores was examined with a small sample from Iowa (n = 10). Ten children in the sample were observed twice using the individualized items. Time between observations ranged from 6 to 27 days with a mean of 17 days. Results should be interpreted with caution due to its small size and being a sample of convenience. The difference in total individualized ECERS-R score between time 1 and time 2 was .99. Paired t-tests were computed to determine if there were differences between overall individualized ECERS scores at time 1 and time 2. Results revealed there was a difference ($t = 5.122$, $p =$. 001). However, the scores were moderately correlated ($r = .54$). Examining individual items revealed different results. Paired t-tests revealed a difference between time 1 and time 2 on only one item: Group Time ($t = 2.33$, $p = .045$).

Validity

Correlations among the three individualized subscales, the ECERS-R total mean score, and subscales of the ECERS-R are presented in Table 8. Generally, the individual total score and the mean scores of three individualized subscales were positively associated with the ECERS-R total mean score and with the ECERS-R subscale scores for the total sample as well as within the three levels based on global quality ratings (ECERS-R). Interestingly, the shared variance between the individualized Language subscale and the ECERS-R total mean score and Language and reasoning subscale of ECERS-R were 35% ($r = .59$) and 46% ($r =$ .68), respectively. This indicates that the individualized Language subscale had more variability, and shared less variance with ECERS-R, than did any the individualized subscale. Next, we examined whether relations between the individualized subscales and ECERS-R scores were similar across different levels of global classroom quality (see Table 8). In our

sample, there were only 10 classrooms that received inadequate quality ratings. Even so, within this small sub-sample of classrooms, the ECERS-R Language/reasoning subscale score was related highly to the individualized total scores, as well as the other individualized subscale scores. On average, the individualized total score and subscale scores were correlated moderately with all ECERS-R scores in classrooms rated as providing mediocre quality care. However, among classrooms rated as providing good quality care, the variability in relations between individualized scores and ECERS-R scores was great.

Table 8

Intercorrelations for Individualized Scores, and Total ECERS by Levels of Care Quality

	ECERS				
Individualized ECERS-R	Total	Activities	Program Structure	Interaction	Language Reasoning
Total	(*N*=138)				
Total	.84***	.78***	.78***	.77***	.79***
Curriculum	.84***	.81***	.85***	.69***	.66***
Interaction	.73***	.61***	.62***	.79***	.72***
Language	.59***	.51***	.49***	.55***	.68***
(Inadequate ECERS	*n*=10)				
Total	.54+	.18	.39	.27	.81**
Curriculum	.24	.47	.51	.03	.65*
Interaction	.61+	.05	.35	.34	.70*
Language	.36	.20	.14	.34	.82**
(Mediocre ECERS	*n*=63)				
Total	.63***	.51***	.53***	.54***	.51***
Curriculum	.57***	.55***	.66***	.35**	.26*
Interaction	.54***	.30*	.31*	.68***	.51***
Language	.43***	.32**	.26*	.34**	.44***
(Good ECERS	*n*=65)				
Total	.32**	.21^{+}	.13	.24*	.55***
Curriculum	.48***	.40***	.47***	.17	.31*
Interaction	.04	-.14	-.16	.39***	.31*
Language	.22+	.03	-.10	.19*	.60***

$^{+}p < .10$ $*p < .05$ $**p < .01$ $***p < .001$.

Correlations between the individualized ECERS-R item scores and structural quality variables that describe the classrooms are presented in Table 9. Overall, higher individualized ECERS-R scores were related to greater levels of teacher education and higher teacher salaries. However, teachers' years of experience and the number of training experiences teachers had received, even when those training activities were related directly to child development, were related negatively to the individualized scores. Interestingly, the smaller group size of the classroom was related to higher individualized scores but not to ECERS-R scores.

Table 9

Intercorrleations for Care Subscales and Structural Quality Variables

	Structural Quality Variables					
			Teacher			Classroom
	Experience (*n*=116)	Education (*n*=118)	No. of trainings (*n*=114)	No. of CD Trainings (*n*=114)	Salary (*n*=70)	Group Size (*n*=130)
Individualized ECERS-R						
Total	-.17	.49**	-24**	-.20*	.29*	-.24**
Curriculum	-.22*	.38**	-.31**	-.21*	.27*	-.18*
Interaction	-.1	.44**	-.19*	-.15	.27*	-.16
Language	-.13	.48**	-.20*	-.24*	.28*	-.25**
ECERS-R	-.27**	.42**	-.30**	-.26**	.31**	-.09
Activities	-.17	.36**	-.12	-.10	.27*	-.15
Program Structure	-.19	.39**	-.25*	-.19	.35**	-.20
Interaction	-.24*	.33**	-.28**	-.24*	.29*	-.13
Language Reasoning	-.13	.48**	-.23*	-.27**	.39**	-.18

*p.< .05 **p.< .001

Refinement of the Individualized ECERS-R Items

The initial use of the individualized ECERS-R items was restricted to low-income children, most without identified disabilities. Additionally, several questions regarding clarifying items and procedures were raised during data collection. Therefore, a refinement of the individualized items was warranted before the items were used for further research. Researchers wanted to provide clearer definitions and examples for each item while maintaining a level of continuity with the original scale. Therefore, the refinement process began by examining each item for inconsistencies among and between items. Items were revised so that the level of use and experiences could be compared across items. Additional definitions, examples, and notes for clarification were added to assist in the administration of the scale. Then researchers piloted the items in a sample of inclusive classrooms that did not participate in the study. Based on the pilot results and experiences of researchers with the measure, definitions of observation targets were refined and some items were expanded. For additional research project, new research assistants became familiar with the instruments and then observed with a trained observer allowing for communication during the observation. During this initial part of training, any additional clarifications or revisions needed for refinement were addressed before reliability was established. Observers where then required to become reliable on the finalized measure.

References

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